Drug and Cosmetic Industry

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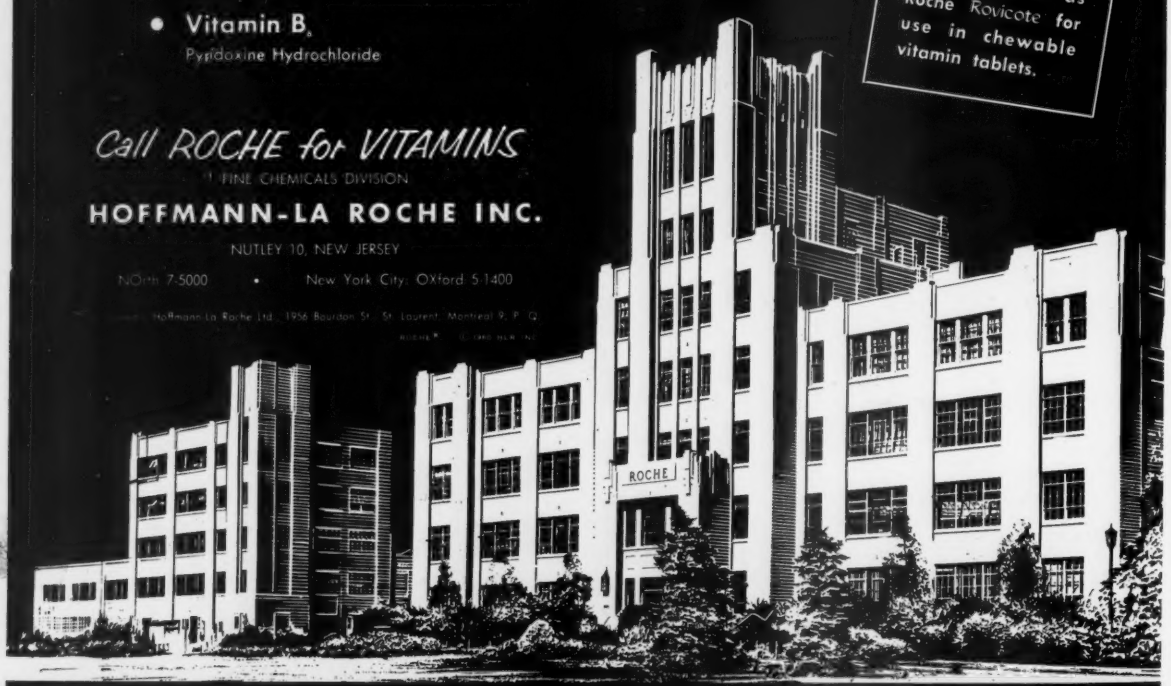

RIGHT FROM ROCHE

SPEAKING FROM FRANCE

A. E. DESPERROIS *has an M.A. degree in Sciences and is a Chemical Engineer E.N.S.C.P. (Escole Nationale Superieure de Chimie de PARIS). He has managed the technical services of Jean d'ALBRET-ORLANE Company of Paris, producers of perfumes and beauty products, since it was founded. Previously he was a Consulting Engineer in perfumes and toilet goods.*

Glycerine

IN MAKE-UP PRODUCTS

Since SCHEELE, 180 years ago, made his famous communication to the Pharmaceutical Society of Upsala regarding his discovery in the residue from pharmaceutical plaster manufacturing of a sugary liquid, the many uses of glycerine (as it was named by Chevreul) have multiplied and even the later discovery of glycols and of other polyols has not slowed down its progress.

Some of those uses have had tremendous repercussions, if only in dynamite, but we shall only deal here with the more peaceful uses. Glycerine is used in the cosmetic industry in a great number of preparations, because its desirable properties cannot all be replaced by any other product comparable with glycerine.

1—Its hygroscopic power is superior to that of all the other polyalcohols. A 57.6% solution of glycerine has a composition which is invariable in normal atmospheric conditions. The presence of glycerine, even in small proportion (between 2 and 5%) gives the water content of a cream a permanent quality which is extremely valuable. These days when hydrating, or moisturizing products are so much in demand, the presence of glycerine remarkably increases the hydrating power of a preparation.

2—Glycerine has a dissolving and plasticizing power superior to that of water. This property is particularly interesting, since a great number of products are used nowadays in the foundation of modern creams and it is necessary to present the public with perfectly homogeneous products. The presence of glycerine in a make-up cream enables the pigments to spread out far more uniformly, thus giving a cream which can be used more easily on the skin.

3—It is particularly rare to discover a skin, even among the most sensitive and delicate, which will not tolerate glycerine solutions. It is on the contrary a very softening product. Furthermore, it has advantage over certain glycols in that it is not toxic.

4—Glycerine does not change with the contact of air in normal temperature conditions. Thus it is not to be

feared that unusual colors will appear nor that odors will eventually develop due to glycerine when products are kept for a long time. This stability is extremely important particularly in liquid make-ups where color variations can take place during the life of the products.

5–Glycerine is chemically compatible. If coloring materials and pigments have pH which is very different from the neutral 7, they still may be acceptable in a glycerine formulation.

6–Glycerine also possesses a fixing power for the perfumes; one knows how difficult it can be to maintain permanently the same perfume note to accompany a make-up product because of evaporation or internal reactions. The presence of glycerine in a make-up insures conservation of the perfume note chosen until the product has been used up.

In all the make-up products, whether they be creams, bases, cream rouge, lipstick, the product which is spread on the skin must not penetrate too deeply. Whereas, in a treatment cream one looks for a very powerful penetration quality for the base, which will support the active product. On the contrary, make-up products should not penetrate the skin. The problem is thus entirely different regarding the use of glycerine in make-up. At the level at which glycerine is used in make-up products its penetration is sufficiently low to avoid undesirable effects.

For still more complete reduction of penetration where it is not desired, it is frequently the practice to use starch glycerol which possesses all the softening and hygroscopic qualities of glycerine. Starch glycerol or glycerite of starch as it is also known, is composed of the following ingredients:

Starch	10 grams
Distilled water	20 cc
Glycerine	70 cc
Preservative	

When a smooth paste of starch, water and glycerine is made, the mixture is heated to around 140°C under constant stirring until the jelly becomes translucent.

LIP JELLIES

Poucher has suggested a number of formulas for lip jellies based on a glycerol-gelatin composition (1). As a basic recipe the following is used:

Glycerine	750
Gelatin	20
40% Formaldehyde	10
Distilled water	220
Total	1000

This formula may be modified by adding either a solution of eosine or of an ammoniacal solution of carmine. Although rose is a popular fragrance, others may be used.

Cerebelaud, the celebrated French perfumer and cosmetic chemist approached the same product slightly differently (2).

Edible gelatin	20 grams
50% Glycerine in rose water	1000 grams

Although varying in approach, the end product contains 2% gelatine in a 50% (approx.) glycerine solution in an already perfumed vehicle, rose water. This jelly may be tinted to suit.

A liquid lipstick formulated along modern lines is attributed to deNavarre.

Polyvinyl alcohol	4 parts
Glycerine	2 parts
Soluble color	1 part
Alcohol	10 parts
Water	83 parts
Total	100 parts

Here the glycerine acts as a plasticizer for the polyvinyl alcohol and prevents drying of the lips.

A liquid rouge in former times was a simple solution of carmine in enough glycerine and water to give the product penetration, lubrication during the application and a moist "dewey" appearance that was considered natural.

However liquid rouges of today are exemplified by the formula given by Heinrich (3).

Color	6.0%
Glycerine	4.0%
Methyl Paraben	0.1%
Diethylene glycol stearate	9.0%
Spermaceti	3.0%
Sodium lauryl sulfate	1.0%
Water	76.9%
Perfume	q.s.

This is a creamy liquid emulsion which may contain both soluble coloring as well as color lakes.

A solid cream rouge currently popular is based on vanishing cream utilizing the plasticizing properties of glycerine. It consists of the following materials (3):

Stearic acid	20.0 parts
Cetyl alcohol	2.0 parts
Glycerine	10.0 parts
Potassium hydroxide	1.0 parts
Water	58.9 parts
Pigment	8.0 parts
Methyl Paraben	0.1 parts
Perfume	q.s.

A more recent version of emulsified lipstick is the following formula devised by Velon (4).

Triethanolamine	6.5 parts
Glycerine	21.5 parts
Eosine solution	3.0 parts
Stearic acid	15.0 parts
Mineral oil	22.0 parts
Ozokerite	26.0 parts
Oleic acid	8.5 parts

This type of lipstick was exceedingly popular some thirty or so years ago in a somewhat different formulation. The above formula may be modified by color lakes to make more acceptable lipstick shades in these modern times. Moisturizing is "built" into the lipstick while emulsification is obtained with currently available materials.

Liquid powders of former times often contained from 10–15% glycerine along with the usual pigments such as talc, zinc oxide, precipitated chalk and suitable colorants of the earth pigment class.

A transitional product between the older liquid powders and the modern liquid make-up is exemplified by two formulas, both patented some time ago. In the older formula, use is made of undecylic (5) acid to give a better wetting to the pigments and longer lasting properties on the skin.

Zinc stearate	3.8 parts
Undecylic acid	0.2 parts
Titanium dioxide	8.0 parts
Talc	10.5 parts
Glycerine	6.0 parts
Water	80.0 parts

The latter formula patented during the last war does not utilize glycerine directly but it does use glycerol tristearate to reduce the surface tension of the oil vehicle (6).

Sesame oil	64.0 parts
Zinc oxide	11.0 parts
Titanium dioxide	16.0 parts
Oxycholesterol	2.0 parts
Glycerol Tristearate	1.0 part
Color	5.5 parts
Perfume	0.5 parts
p-Hydroxbenzoic acid	q.s.

For the past few years, semi-liquid make-up bases containing bentonite have been successfully used. They have a great advantage: They dry fairly quickly on the skin thus giving it a powdery aspect which is very attractive, but they still have one problem: as they dry they have a tendency to tighten the skin thus creating a sort of mask. This is where the use of glycerine is particularly appreciated. The drying process is slowed down according to the quantity of glycerine used. The astringent action is overcome by the softness and hygroscopic quality of glycerine, and as a result one can create a make-up base which will correspond exactly to what one has in mind.

Here are a few formulas for make-up products in which glycerine appears:

1—Triethanolamine stearate	25
Water	35
Glycerine	20
Titanium dioxide	5
Pigment	15
Preservative and perfume	q.s.
2—Talc	40
Starch glycerol	10
Sorbitol laurate	10
Zinc oxide	20
Sorbitol syrup	3
Mineral oil 65/75	1
Water	16
Color, perfume and preservative	q.s.
3—Bentonite U.S.P.	2.5
Titanium dioxide	2
Water	40
Glycerine	25
Propylene glycol	6
Carbitol	6
Triethanolamine stearate	3.5
Mineral oil 65/75	5
Color	10
Preservative and perfume	q.s.

A blemish covering preparation, the patent for which is outdated (7), consists of

2041 grams zinc oxide
720 cc distilled water
300 cc glycerine

This thick paste was then suitably colored. However, glyceryl monostearate 40%, triethanolamine stearate 40%, beeswax 10% and carnauba wax is a good starting point in formulating cake mascara.

To sum up, while glycerine is useful in formulating cosmetic creams it is important in compounding make-up products as well. It possesses plasticizing, moisturizing, spreading and fixative powers so necessary in make-up. Its lubricating and coupling action are not to be dismissed either. When used in sufficient concentration it is a preservative. One must not dispose of starch glycerol and glycerol gelatin too quickly as valuable glycerine modifications for use in make-up and other cosmetics.

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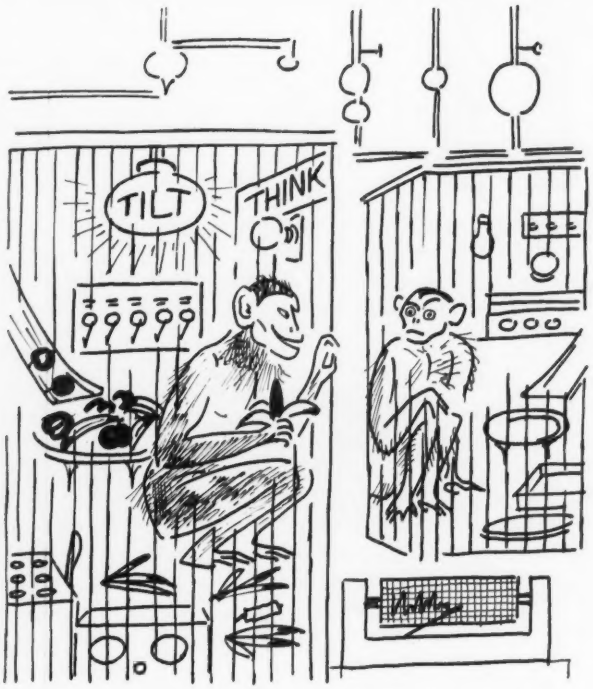

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Keeping Posted

Baxter Laboratories Outlook

Sales of Baxter Laboratories will increase by 15 per cent to about $34 million in 1960, and earnings 20 per cent to about $1.75 a share, company president William B. Graham told the Cleveland Society of Security Analysts. Increases are also anticipated for 1961, he said. These increases will be due, at least in part, to the success of products introduced in the last two years and new products now in the planning stages. The latter include a device permitting a new approach to cancer therapy; another device to permit bloodless surgery on the heart and lungs; and a new pharmaceutical enzyme for debridement of burns and wounds.

The new device for cancer is called Perfuso-Pac and is for regional perfusion. This permits physicians to localize treatment with anti-cancer drugs, previously considered too dangerous to the patient because of systemic toxicity. Perfuso-Pac is a bubble oxygenator providing a partial by-pass of the heart and lungs for certain parts of the body, such as arms and legs. An anticipated modification and improvement of this device will be known as the total by-pass heart-lung oxygenator, which will take over completely the function of the heart and lungs permitting bloodless surgery on these organs, and thus greatly reducing time and risk on the operating table.

Vitamins and the FDA

Commissioner of Foods and Drugs George P. Larrick feels that significant changes are essential in the field of vitamins and nutritional supplements. He says that the Food and Drug Administration cannot accept the view that, so long as no one is hurt, vitamin promotion should continue along present lines. He believes that food standards will have to be established to regulate vitamin preparations.

Mr. Larrick points out that, as the result of addition of ingredient after ingredient, including minute amounts of trace minerals, there are formulation monstrosities containing 20 or more ingredients. Many of these are not necessary to supplement the American diet, he claims, and their use is often based on questionable scientific studies, he says. Also, Mr. Larrick is opposed to the higher and higher dosages of vitamins being marketed for dietary use; he believes these are not necessary but they are offered "to create the illusion that if a product has ten times the daily requirement it must be far better than competitive products with 'only' two or three times the minimum daily requirement." He said that it is possible for these supplements to be hazardous in dosage, and that the fat-soluble vitamins and folic acid are in the hazardous category. Regarding folic acid, Mr. Larrick says that recent studies have shown that while folic acid is safe at levels of 0.4 mg. per day, there is a potential hazard beyond that level. It is believed the FDA is considering the timing of a ban on folic acid as a food additive, with reference to the disposition of retail, wholesale, and warehouse stocks, and material in process.

Wellcome Trust Gift

A gift of 50,000 pounds sterling (approximately $140,000) from Wellcome Trust to the Massachusetts General Hospital for the establishment of the Henry S. Wellcome Fund for Research in Medical Science was recently announced by Sir Henry H. Dale, chairman of the Wellcome trustees, London. Francis C. Gray, chairman of the board of trustees of Massachusetts General Hospital, Boston, said, "This generous gift will provide the basic support for one of the most important objectives of the 150th Anniversary Program of the Massachusetts General Hospital, namely, strengthening the capacity of the hospital to foster medical research on a long-term basis."

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Previous benefactions of the Wellcome Trust, within the United States, were the establishment in 1956 of a Wellcome Associate Research Professorship of Anesthesiology at the University of Pennsylvania, and a more recent provision of funds to build a laboratory for cardiovascular research in the Department of Medicine at Johns Hopkins Hospital, Baltimore.

Lucky Tiger Buys York Pharmical

Lucky Tiger Manufacturing Company of Kansas City, Missouri, has purchased the York Pharmical Company of St. Louis, and will utilize the 75,000 square-foot St. Louis plant to produce an expanded line of drugs and cosmetics for both men and women. Stephen W. Harris, president of Lucky Tiger, which has been a leading maker of men's hair preparations since its founding in 1917, points out that the company will now be one of the largest producers of wet and dry drugs and proprietaries in the Midwest. A broad line of high quality, competitive-priced products is planned.

Olive Tablets and Beechams Pills Adv.

The present marketers of Dr. Edwards' Olive Tablets and Beechams Pills have consented to Federal Trade Commission orders prohibiting them from falsely advertising health benefits of these products. The companies now involved are: Plough, Inc., legal successor to the defunct Olive Tablet Co., which originally was named a respondent in an FTC complaint of December 1, 1943; and Harold F. Ritchie, Inc., distributor of Beechams Pills since the dissolution of Beechams Pills, Inc., the company originally named in an FTC complaint of August 26, 1946.

After issuance of the complaints, Olive and Beecham agreed to discontinue the challenged claims pending disposition of similar issues in the case of Carter's Little Liver Pills, and to be bound by the facts relating to these issues as would be found by the FTC in the Carter case. The decision in the Carter case became final on November 9, 1959. Plough and Ritchie, who became the owners of these products while the Carter case was in progress, consented to be bound as successors in interest by the complaints against their predecessors.

Under the terms of the order, Plough and Ritchie must not claim that their respective products will aid in promoting the flow of bile; increase or beneficially influence the formation, secretion, or flow of bile from the liver or gall bladder; or have any effect on the tone of the intestinal muscles. Also, Ritchie must not represent that Beechams Pills will stimulate, promote, or aid the digestion of food, or regulate digestion or the digestive system; are a competent or effective remedy for gaseous, bloated, or tight feeling around the waist; will bring on or restore regularity of bowel movement, or are a cure or effective treatment for constipation or any of its symptoms, except for temporary relief provided by their laxative action; and are unqualifiedly safe.

Mahlon N. Kline Science Building

The Mahlon N. Kline Science Building, named for a founder of Smith, Kline & French Laboratories, and presented by his son, C. Mahlon Kline, honorary chairman of the board of the company, was dedicated last month in ceremonies at Chesnut Hill Academy in Philadelphia. The two-story building at the private academy for nearly 500 boys is the first new academic facility to be constructed under a new building program. Housed in the modern brick building at a cost of $200,000 are laboratories and classrooms for chemistry, physics, biology, geology, and general sciences. It also contains a science library and an art studio.

Tranquilizer Market Stabilizes

Only one in 20 new prescriptions for private patients is for an ataractic product, and there has been no percentage increase since 1958, according to David D. Stiles, director of market development at Abbott Laboratories. "And even this is an exaggeration of the actual number of persons taking tranquilizers for mental disturbances," he says. He points out that 20,700,000 new tranquilizer prescriptions were filled in pharmacies in 1959—or about one for every nine Americans.

However, he adds, "tranquilizers are frequently used for discomfort unrelated to mental conditions, such as various types of nausea in pregnancy, following surgery, etc. Again, when a patient cannot tolerate one type of tranquilizer, another type may be tried. So the actual number of people for whom tranquilizers are prescribed for mental causes is much less than 20,700,000."

Mr. Stiles says that the Continuous Prescription Survey, operated through the cooperation of colleges of pharmacy, shows that the tranquilizer market has tended to stabilize in the last two years. Ataractics took 5.0 per cent of new prescriptions in 1956, 5.4 per cent in 1957, and 5.3 per cent in 1958 and 1959. There were three refills for every two new prescriptions. In 1959 an estimated 650,000,000 new and refilled prescriptions were recorded in the nation's 53,000 pharmacies.

Chemway Buys Opthalmic Specialties

Chemway Corporation has acquired specialty products used in the fields of opthalmology and optometry, through the purchase of Iso-Sol Co., and its subsidiary, Contactisol, Inc., both of Lindenhurst, Long Island, N. Y. Chemway president, Charles T. Silloway, said that Iso-Sol and its opthalmological specialties will be integrated into Chemway's ethical

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subsidiary, Crookes-Barnes Laboratories, and that Contactisol, Inc., will become an operating affiliate of Crookes-Barnes. Contactisol markets special preparations for wearers of contact lenses and for other optical uses. The two lines, totaling 25 key products, have for practical purposes been marketed in the Middle Atlantic states only. They will receive immediate national distribution through Crookes-Barnes sales organization.

Sterling Loses Bayer Name in Australia

The High Court of Australia in Sydney decided in Farbenfabriken Bayer A.G., Leverkusen, Germany v. Bayer Pharma Pty. Ltd. Sydney (a subsidiary of Sterling Drug Inc.) on May 11, 1960, that Bayer Pharma Pty. Ltd. Sydney is not entitled to register the word Bayer and the Bayer Cross. The court held that these trademarks were in the mind of the Australian public so closely connected with the organization of Bayer Leverkusen, Germany, that their use by Bayer Pharma Pty. Ltd. Sydney would result in deception of the public. The decision will probably be appealed.

SchenLabs Bought by Rexall

SchenLabs Pharmaceuticals, Inc., drug division of Schenley Industries, Inc., has been acquired by Rexall Drug & Chemical Company. SchenLabs will become part of Riker Laboratories, Inc., Northridge, California, Rexall's ethical drug subsidiary.

Flemming and the FDA

Having been caught in a very embarrassing position with regard to the extremely large income from outside interests of Food and Drug Administration Antibiotic Chief Dr. Henry Welch, whose activities were long approved officially, Health, Education and Welfare Secretary Arthur S. Flemming seems willing to agree to the need for almost any type of additional restrictive legislation that anyone suggests.

Mr. Flemming wants the FDA to have control of the efficacy of drug products as well as of quality. Furthermore, he would control these and other factors by what he admits amounts to a licensing provision. Under a licensing provision it is felt that the government could more easily encourage doctors to prescribe drugs by the use of generic names, rather than by brand names. In other words, an amendment to the law is supposed to make all drug manufacturers alike, at least in the eyes of the medical profession.

Among other things that Mr. Flemming is asking for, is mandatory certification for all antibiotics. It will be recalled that the FDA was very anxious to obtain this through legislation some years ago, but the upshot was that it was impossible to come up with a definition of antibiotics that did not include all drugs. As a matter of fact, it is no longer necessary to certify the large majority of antibiotics. The chemical structures of most antibiotics are known and, therefore, they should be treated as ordinary medicinal chemicals.

In addition to this, Secretary Flemming appears willing to throw the Food and Drug Administration to the wolves and cooperate in a thorough-going investigation that would doubtless cause the excellent relationship that has existed between the FDA and the industry to be a thing of the past. The fact that drug manufacurers or their representatives are able to talk face-to-face with officials of the FDA now seems to be something that is wrong, even though, as the FDA and the industry knows, it makes for more efficient enforcement of the law. Certainly the manufacture, labeling, and distribution of drug products is far too complex a matter for every angle of it to be the subject of a public hearing.

The Food and Drug Administration has long known that the best way to enforce the law is to obtain the cooperation of the industry in doing so. And the industry has responded well to this sort of treatment. This is not to say that the FDA does as the industry requests. There are many skirmishes between the two about various provisions in the law, and the FDA does not yield any ground when it feels it is in the right.

The present Commissioner of Food and Drugs, George P. Larrick, is a highly dedicated man who has served under Commissioners Campbell, Dunbar, and Crawford, who followed after Harvey Wiley. The criticism of the FDA is based simply on evidence given before the Kefauver Committee by disgruntled employees who evidently did not understand what the operation of the FDA is all about.

What is particularly strange and quite surprising is the fact that because of large sums of money received by one official of the FDA from outside interests which raised the question of conflict of interest on the part of that official, the entire Food and Drug Administration becomes suspect. As in the case of other situations discussed before the Kefauver Committee, witnesses were presented who expressed opinions regarding the FDA that do great violence to the actual facts of the enforcement of the Food, Drug, and Cosmetic Act by these dedicated individuals.

It certainly appears that smear tactics are being liberally used by the Kefauver Committee on the Food and Drug Administration merely for the purpose of trying to persuade people to believe that certain senators are the guardians of the public interest. But these senators have no concern that they might cause serious damage to the effective enforcement of the Food, Drug, and Cosmetic Act through their actions. And Secretary Flemming seems perfectly willing to go along with this type of action, making no attempt to defend the FDA, which is under his jurisdiction.

Chesebrough-Pond's in Clinton

After two years of effort, Chesebrough-Pond's, Inc. has completed the project of integrating all domestic

LOS ANGELES 21
San Francisco
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manufacturing and research activities at Clinton for the purpose of consolidating four plants into one. Within the last year and a half the original plans for the newly modernized and considerably expanded plant in Clinton, Connecticut, were revised several times to accommodate the production and laboratory operations of three newly acquired companies, Prince Matchabelli Inc., Seaforth Men's Toiletries, and Aziza Eye Cosmetics.

As a result of the consolidation, the Clinton plant has more than 800 employees today, compared to 385 in 1958. The payroll has increased from about $1.5 million, to $3.6 million for 1960. Research chemists, doubled in number within the past year, are provided with the most modern equipment; manufacturing methods are geared to put test-proven items into production with speed and efficiency; and filling and billing of orders is accomplished with the most advanced computing systems.

FDA Bans Colors

The Food and Drug Administration issued on June 21 a tentative order removing 14 lipstick colors from the approved list. These are the colors that were the subject of a hearing held by the FDA last February. The order banning these colors is subject to appeal and so was delayed 20 days from the issuing date. In addition to filing objections to the order, the industry has announced that it will appeal the decision to the courts, if necessary. Meanwhile, the industry will continue to use the colors.

A.M.A. to Study Drug Industry

The American Medical Association voted at its annual convention last month to undertake a year-long study of the drug field, as a result of the Kefauver Committee hearings. The House of Delegates, policy-making body of the association, stressed the fact that it would be a "study" and not an "investigation." The association's Council on Drugs, a committee composed of 13 physicians, and headed by Dr. Issac Starr of University Hospital in Philadelphia, will supervise the official study.

Federal Government participation at local levels "as a last resort" for the aged was approved by the House of Delegates of the American Medical Association at its annual meeting held last month. Also adopted by the House of Delegates was a report condemning the "unorthodox practice of mail-order filling of prescriptions." The resolution said that the practice is not in the best interest of the patient except in cases where geographical isolation makes it necessary.

American Can to Make Glass Containers

American Can Company intends to extend its operations to the manufacture and sale of glass containers, with management services and technical assistance to be provided by Wheaton Glass Company of Millville, New Jersey. This phase of American Can's business will be conducted through a majority-owned subsidiary of American Can, the other stockholder being Wheaton Glass Company. William C. Stolk, chairman of the board and chief executive officer of American, will be chairman and chief executive officer of this subsidiary, and Frank Wheaton, Jr., will be president. American Can's initial investment in the glass container business will be about $6 million. American now manufactures metal cans, paperboard milk containers, and composite containers.

Murk Schaap Gets Merck Sharp & Dohme Fellowship

The Adwarding of a Merck Sharp & Dohme International Fellowship in Rehabilitation to Murk Schaap, M.D., Amsterdam, the Netherlands, was recently announced by Howard A. Rusk, M.D., president of the World Rehabilitation Fund. Dr. Schaap is with the Amsterdam Center for Rheumatology, which is the largest department of physical medicine and rehabilitation in the Netherlands.

Mead Johnson Buys Brail Firm

Mead Johnson & Company has acquired the Brazilian firm of Industria Farmaceutica Endochimica, S.A., of Sao Paulo, for a purchase price in excess of $2 million. Endochimica, founded in 1939 and employing about 500 persons, is one of Brazil's largest pharmaceutical houses. It produces an integrated line of 33 different products in the vitamin, liver, hormone, and pharmaceutical fields. It has modern, functional manufacturing facilities and a favorable medical and trade franchise.

This purchase marks Mead Johnson's third international acquisition within the past year. In December 1959 it purchased Laboratoires Allard, S.A., in Paris, France, and in February 1960 it acquired Productos Farmaceuticos Leo de Colombia, Limitada, in Bogota, Colombia.

The Endochimica organization will continue to operate as a separate Brazilian corporation under S. W. Kapranos, Mead Johnson's vice-president for Latin American operations. The subsidiary will continue to market its own products in Brazil, and appropriate Mead Johnson products will be added to the line.

Revlon Acquires Realistic

Revlon, Inc., has acquired The Realistic Company of Cincinnati, Ohio, for "several million dollars" in a combination of cash and stock. Realistic products include professional beauty salon permanent waves, shampoos, hair dressings, hair sprays, and their conditioners. The company will be operated as a wholly-owned subsidiary of Revlon.

Revlon president Charles Revson said: "Realistic's nation-wide distribution and established line of products complements Revlon's in rounding out our service to professional beauty salons. The acquisition is a further step in carrying out Revlon's policies to broaden services to our customers and continue the growth and development of the company in existing

markets, as well as new ones."

Realistic was founded in 1925 by Phil D. Spaeth, who retired as chairman of the board upon Revlon's acquisition of the company. Realistic employs about 150 persons in Cincinnati, operates a wholly-owned subsidiary in Oakville, Ontario, and has operations in Mexico and the Philippines. It is said to be the oldest manufacturer of prestige products for professional beauty salons. K. R. McKowen, president of Realistic, said that no changes in management or operations are contemplated at Cincinnati and other plants, nor in dealer policies, distribution, or personnel.

Larrick Asks Law Changes

In his testimony before the Kefauver Committee, Food and Drugs Commissioner George P. Larrick said that about 500 out of 1,300 ethical drug manufacturers were inspected in 1959. Inspection was done on a selective sampling basis, but "the coverage being given the industry through inspection and analysis of samples is inadequate and this applies to large and small firms alike." Part of the FDA difficulty in inspection is due to the fact that FDA "authority to inspect manufacturers of drugs was severely restricted when Congress passed the factory inspection amendment in 1953, with the result that many manufacturers, both large and small, now refuse to let inspectors inspect significant phases of their drug operations."

Mr. Larrick would like the Food, Drug and Cosmetic Act amended to give the FDA authority to make a proper inspection in order to determine whether or not proper control procedures exist to guarantee compliance with the law. The amendment should make it mandatory that these procedures exist and that they are used, or else the drugs coming from the plant should be deemed to be adulterated under the law. Larrick feels that this will enable the FDA to require by injunction proceedings the installation of proper manufacturing facilities and utilization of appropriate control procedures. He also wants an amendment to the law giving the FDA free access to a drug manufacturer's reports covering clinical experience with a new drug.

Mr. Larrick said that the FDA is concerned about false or misleading promotional literature for new drugs sent to physicians, and predicted that a part of this might be taken care of by a revision of regulations. He said some of the literature may differ from the cleared labeling in the New Drug Application, and indicated that in such cases false or misleading promotional material would be subject to seizure or prosecution, and that the unauthorized labeling would provide a basis for suspension of the New Drug Application. Pre-clearance of promotional material would require a larger staff, said Mr. Larrick, adding that a handicap in curbing exaggerated claims for new drugs is the difficulty of appraising the therapeutic efficiency of these drugs.

Warren-Teed Buys Phar-Med

Warren-Teed Products Co., Columbus, Ohio, has acquired Phar-Med, Inc., a proprietary drug company of East Detroit, Michigan. Warren-Teed president R. D. Workman says this is another step in the company's continuing program of expansion in research, manufacture, and sale of pharmaceuticals. He added that Phar-Med will continue to operate under that name as a subsidiary of Warren-Teed, and that W. G. Sonneman, its founder, will retain his position of president and general manager. J. Russell Lang, formerly promotion director of Warren-Teed, has been elected vice-president and sales manager of Phar-Med.

N.B.C. Medical Advertising Deferred

The National Broadcasting Company has notified advertisers who have subscribed to its medical advertising plan that it is postponing its medical radio advertising plan. The plan, to become operative next Fall, would have placed FM multiplex receivers in doctors' offices for broadcasting music as well as special medical information and advertisements on a daily basis. NBC says that the plan "is still very much alive," but has been deferred "for the time being." Since NBC announced its plan, a variety of other medical advertising plans have been announced. Some involve AM or FM radio, while others depend on the circulation of medical information recordings to subscribing doctors.

Unions Plan Cut-Rate Drugstores

Officers of nine major labor unions in New York City have taken the first step of incorporation toward organizing a chain of nonprofit cut-rate drugstores in the city. The sponsors hope it will enable participating union members to cut as much as one-third from their family drug bills. They also view it as a vehicle for including prepaid drug insurance in employer-financed welfare programs. The decision to incorporate was made despite protests by six organizations speaking for 3,400 retail druggists, and by the union representing their registered pharmacists and clerks. No decision was made on the capital investment or the number of stores to be operated. It was estimated that drugs could be sold at 30 to 35 per cent less than in regular pharmacies. Generic-name prescribing will be sought from doctors.

Retail druggists' associations declare that these economies are impossible, since the total retail profit before taxes is only 5.2 per cent, and the wholesale profit is only 3 per cent.

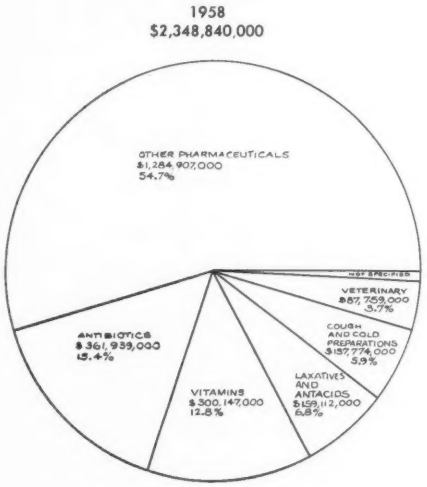
Sponsors of the plan include: Office Employees International Union, Transportation Workers Union, International Ladies Garment Workers Union, Seafarers International Union, International Union of Electrical Workers, locals of International Union of Machinists, United Automobile Workers, Hotel and Restaurant Workers International Union, and Retail Clerks International Association.

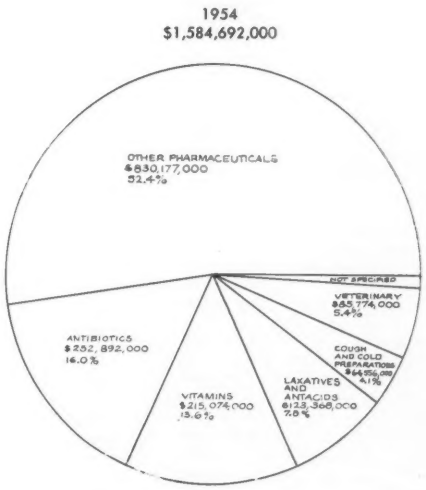
THE PHARMACEUTICAL INDUSTRY 1958

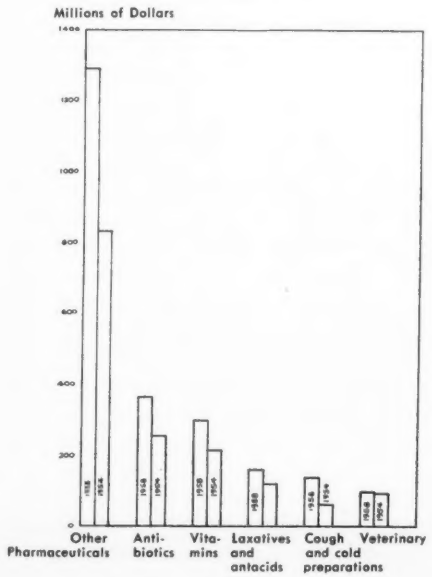
According to the preliminary report of the Census of Manufactures on the Pharmaceutical Preparations Industry for 1958 (Bulletin MC-P-28C-3, available for 10 cents from the Bureau of the Census, Washington 25, D. C.), manufacturers shipped products valued at $2,587.1 million, a 52 per cent increase over 1954 shipments of $1,700.5 million. From 1954 to 1958, average employment increased by 7 per cent to 81,700 while payroll increased 31 per cent from $353.8 million to $465.2 million.

The figure for 1958 total shipments includes $2,211 million for products primary to the industry, $310 million for products primary to other industries, and $66 million for resales and other receipts. The figure being used in tabulations, $2,348.8 million, is the value of primary products of the industry shipped by all producers.

PHARMACEUTICAL PREPARATIONS INDUSTRY





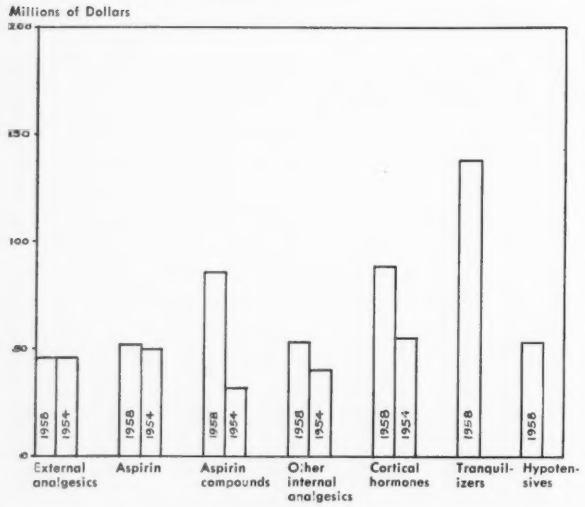


PHARMACEUTICAL PREPARATIONS

	1958	% Change	1954
Veterinary products	$87,759,000	+ 2.3	$85,774,000
Antibiotics	361,939,000	+ 43.1	252,892,000
Cough and cold products	137,774,000	+113.5	64,556,000
Laxatives, antacids, etc.	159,112,000	+ 29.0	123,368,000
Vitamins	300,147,000	+ 39.6	215,074,000
Other pharmaceuticals	1,284,907,000	+ 54.8	830,177,000
Not specified	17,202,000	——	12,851,000
Total	$2,348,840,000	+ 48.3	$1,584,692,000

In contrast with the 1954 data, 1958 shipments are not broken down into ethical and proprietary categories. The report includes data from establishments engaged primarily in the manufacture of drugs in pharmaceutical preparations such as ampules, tablets, capsules, ointments, medicinal powders, solutions, and suspensions for human and veterinary use.

As shown in the accompanying table, pharmaceutical preparations for 1958 were valued at $2,348,-

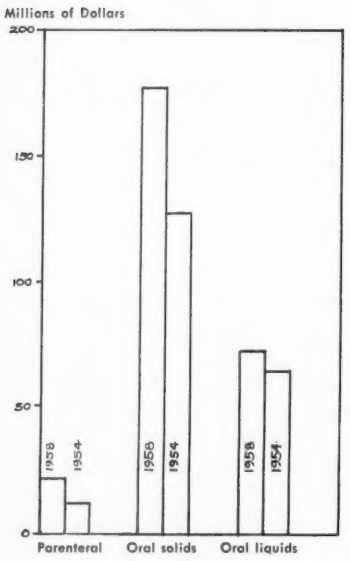


OTHER PHARMACEUTICALS

	1958	% Change	1954
Anesthetics	$15,620,000	+ 3.5	$15,111,000
External analgesics	46,346,000	+ 0.3	46,218,000
Aspirin	51,749,000	+ 4.7	49,426,000
Aspirin compounds	86,079,000	+173.3	31,538,000
Other internal analgesics	53,291,000	——	39,041,000
Antihistamines	29,701,000	— 8.5	32,469,000
Antiseptic ointments and creams	33,532,000	+ 75.8	19,102,000
Antiseptic liquids	20,743,000	——	20,865,000
Other antiseptics	4,630,000	——	5,896,000
Anti-obesity preparations	29,852,000	+ 40.2	21,289,000
Stimulants	6,024,000	+173.8	2,200,000
Hematinics	39,094,000	+ 20.3	32,548,000
Cortical hormones	88,239,000	+ 63.1	54,117,000
Sex hormones	26,567,000	+ 22.3	21,776,000
Thyroid and combinations	5,441,000	+ 59.6	3,413,000
Other hormones	29,857,000	——	24,226,000
Barbiturates	26,432,000	+ 11.5	23,685,000
Barbiturates and combinations	13,595,000	— 4.2	14,193,000
Other hypnotics and sedatives	6,699,000	——	4,770,000
Narcotics and combinations	28,221,000	+ 0.8	28,039,000
Sulfonamides and combinations	36,447,000	+ 53.8	23,691,000
Tonics	19,899,000	— 12.4	23,859,000
Tranquilizers	137,569,000	——	——
Hypotensives	52,248,000	——	——
Diagnostic aids	9,339,000	——	——
Other pharmaceuticals	349,975,000	——	279,010,000
Not specified	37,718,000	——	13,695,000
Total	$1,284,907,000	+ 54.8	$830,177,000

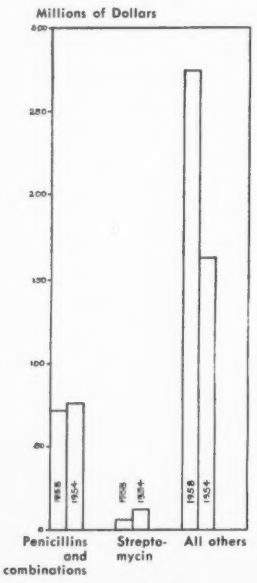
840,000, an increase of 48.3 per cent over the corresponding value for 1954. In the separate categories, veterinary products in the two years increased by 2.3 per cent; antibiotics by 43.1 per cent; cough and cold products by 113.5 per cent; laxatives, antacids, and other gastrointestinal products increased by 29.0 per cent; vitamins were 39.6 per cent greater; and all other pharmaceuticals increased by 54.8 per cent.

Veterinary preparations increased slightly from 1954 to 1958—by 2.3 per cent, from $85,774,000 to $87,759,000. The 1954 total was divided between $49,333,000 of ethical preparations and $33,626,000, proprietaries. Poultry products in 1958 were 36.4 per cent higher at $37,390,000. In 1954, these products totaled $27,444,000, of which $21,567,000 were proprietaries. Livestock products declined 29.7 per cent in 1958, to $33,668,000 from $47,844,000 in 1954.



VITAMINS

	1958	% Change	1954
Parenterals	$21,991,000	+75.9	$12,543,000
Oral solids	177,542,000	+39.8	127,081,000
Oral liquids	72,380,000	+10.2	65,741,000
Others	24,651,000	——	6,174,000
Not specified	3,583,000	——	3,535,000
Total	$300,147,000	+39.6	$215,074,000

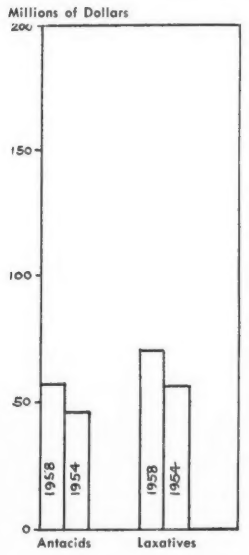


ANTIBIOTICS

	1958	% Change	1954
Penicillin and combinations	$71,429,000	— 6.9	$76,706,000
Streptomycin and dihydrostreptomycin	6,398,000	—49.9	12,767,000
Antibiotics with sulfas	5,823,000	——	——
Broad-spectrum antibiotics	240,475,000	+68.9	——
All other antibiotics	34,715,000		162,926,000
Not specified	3,099,000		493,000
Total	$361,939,000	+43.1	$252,892,000

This is a revised figure for 1954; the original sales were $36,880,000 of ethical and $8,504,000 of pro-

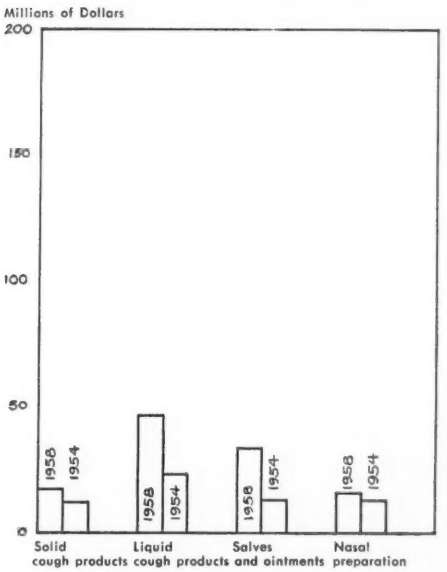
ANTACIDS AND LAXATIVES



LAXATIVES, ANTACIDS, ETC.

	1958	% Change	1954
Solid antacids	$22,624,000	—16.1	$27,076,000
Liquid antacids	32,576,000	+82.0	17,919,000
Other antacids	2,512,000	—	1,662,000
Total antacids	$57,712,000	+23.6	$46,657,000
Mineral oils and emulsions	9,971,000	—10.7	11,166,000
Salines	6,701,000	—20.5	8,426,000
Bulk laxatives	7,346,000	+17.0	6,278,000
Vegetable laxatives	8,958,000	—	—
Other laxatives	37,782,000	—	30,441,000
Total laxatives	$70,764,000	+25.7	$56,311,000
Milk of magnesia, liquid and tablets	—	—	11,892,000
Other gastro-intestinal medications	29,150,000	—	6,683,000
Not specified	1,486,000	—	1,825,000
Total	$159,112,000	+29.0	$123,368,000

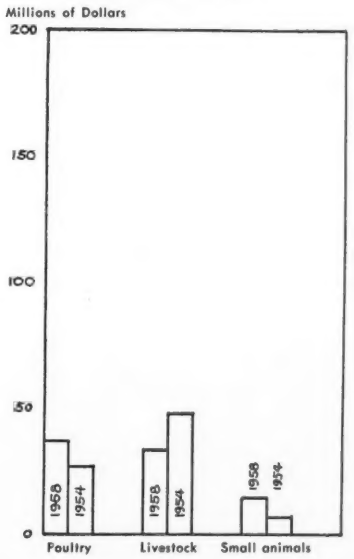
COUGH AND COLD PREPARATIONS



COUGH AND COLD PRODUCTS

	1958	% Change	1954
Solid cough preparations	$17,257,000	+ 45.0	$11,895,000
Cough syrups	46,165,000	+108.0	22,226,000
Salves and ointments	33,101,000	+160.6	12,743,000
Nasal preparations	15,922,000	+ 26.4	12,632,000
All others	21,915,000	—	3,723,000
Not specified	3,414,000	—	1,337,000
Total	$137,774,000	+113.5	$64,556,000

VETERINARY PRODUCTS



VETERINARY PRODUCTS

	1958	% Change	1954
Poultry products	$37,390,000	+36.4	$27,444,000
Livestock products	33,668,000	—29.7	47,844,000
Pet and small animal products	14,296,000	+86.4	7,671,000
Not specified	2,405,000	—	2,815,000
Total	$87,759,000	+ 2.3	$85,774,000

prietary preparations. Pet and small animal preparations were valued at $14,296,000 in 1958, an 86.4 per cent increase over $7,671,000 in 1954. The original 1954 figure in this group was $10,131,000, with $6,576,000 of ethical preparations.

The over-all total for antibiotics increased from $252,892,000 in 1954 by 43.1 per cent to $361,939,000 for 1958. Penicillin and combinations were down 6.9 per cent to $71,429,000 and streptomycin and dihydrostreptomycin and combinations declined by 49.9 per cent to $6,398,000. Broad- and medium-spectrum antibiotics, valued at $240,475,000 for 1958, were included in all other antibiotics in 1958; the totals increased by 68.9 per cent

Cough and cold products (excluding analgesics and antihistamines) more than doubled from 1954 to 1958, shipments increasing by 113.5 per cent from $64,556,000 to $137,774,000. In 1954, these sales included $24,448,000 of ethical preparations and $38,771,000 proprietaries. Solid cough preparations (cough drops, lozenges, gums, and pastilles to retail at more than 10 cents per package, and cold tablets) were valued at $17,257,000, a 45.0 per cent increase over $11,895,000 in 1954. In the latter year, ethical sales were valued at $3,158,000. Cough syrup shipments of $46,165,000 in 1958 were 108.0 per cent

(Continued on page 121)

PACKAGING PHARMACEUTICAL AEROSOLS*

BY JOHN J. GRAHAM SCHERING CORPORATION

Pharmaceuticals are the baby of the aerosol industry; we have all seen that the pharmaceutical aerosol has great growth potential. It may never attain the volume of insecticides or hair sprays, but it should provide a comfortable income to fillers, valve manufacturers, and container manufacturers.

We have many of the problems of the other manufacturers, and, in addition, conservative methods of advertising and packaging and the rigid controls of the Food and Drug Administration. We must submit data to the FDA on stability, shelf life, effectiveness, and side effects of the preparation, as well as spray rate and delivery.

We must furnish data from our laboratories to show that both the active ingredients and the inert materials are stable for a period of time; also that leakage of propellent is low enough so that less than 10 per cent is lost over a stated period of time. If the material is stable for two years, or if 10 per cent propellent is lost in two years, our label must carry a two-year expiration date. Because of the distribution system in depth that pharmaceutical concerns use, prescriptions containing a two-year outdating could be uneconomical to produce. Therefore, we look for a minimum shelf life of three years.

The FDA must be furnished with the results of the testing of clinical material by specialists in this field throughout the country. We must record both effectiveness and any side effects reported by independent doctors. We must indicate the percentage of

*Presented at the annual meeting of the Chemical Specialties Manufacturers Association, May 1960.

material sprayed, per two or three seconds of valve activation, and, in metered valves, the exact amount of material delivered on each application. This cannot vary by more than ±10 per cent.

We do not advertise in magazines or newspapers, on radio or television, but we do advertise in medical journals and to doctors, either by direct mailings or by personal contact through our representatives. Clinical investigations are reported as publications in medical journals.

For prescription items, we cannot use lithographed containers, but must have paper labels with directions to the customer attached so that the pharmacist can easily remove the label copy and affix the prescription label.

We entered the aerosol field principally for the same reason many other industries have accepted aerosols; ease of application, economy, and controlled dosage forms. *When the aerosol is used as a gimmick, it will not sell. This has been proved by many items that have reached the market.*

In June 1958, we introduced Meti-Derm Aerosol, and it was well received by the medical profession. Advantages over our cream preparations (described in detail) can be easily seen. When we first started development work on this product, we used the 0.018-in. body opening which delivered 1½ gm./sec. of material. Our 150-gm. container was then emptied in 100 seconds. The patient would receive approximately three times as much medication as was necessary. This aerosol was not economical. By switching to the 0.013 low-spray rate body valve, which delivered 0.5 gm./sec., this same container then would last three times as long.

Physicians now wanted a smaller container so that the patient with limited skin irritation would not self-prescribe. Using approximately half the contents of our large package, and receiving excellent effects, he might give the remaining medication to a relative or friend who had what he thought was a similar problem, and might inadvertently cause some difficulty to this individual. By developing a smaller package this could be eliminated. Which container should we use? Tin, glass, stainless steel, or aluminum? The standard tin can manufacturers make no containers smaller than 3 oz. Glass does not appear similar to the original package. Stainless steel is not an economical container, unless it is definitely required for stability. We found that there were no stability problems with aluminum, and this new package looks like a small replica of our larger size. Simultaneously we adopted the vapor tap for application of our preparation both in an upright and in an inverted position, to simplify application for the consumer.

On the development of this smaller container, we ran into a problem of dip tube growth, which caused the end of the tube to be sealed off at the bottom of the flat container. The standard 3-oz. can with the convex bottom did not present this problem, as the dip tube grew toward the corner and could not seal off. In our original development work, the valve supplier recommended the length of tubing required, and on a Saturday morning we filled off approximately 3,000 cans. The following Monday, approximately 75 per cent would not spray.

With the aid of the valve supplier and our own pharmacology department, we took X-ray pictures of the dip tubes in finished containers, and determined that 2 in. of polyethylene dip tube will grow about ⅛ in. in the presence of Propellent 11. It was then an easy matter to establish specifications. We would have saved quite a bit of time if the suppliers had made us aware of this growth problem.

It is interesting to note that many patients felt the cooling effect of this aerosol was beneficial to the irritation, but by the same token there were some complaints on cooling due to evaporation of propellent. As a result, this month we introduced a new package containing a metered dose of an aerosol foam. This gives the consumer an economical dose whereby one shot can cover an area of approximately 9 sq. in. There were many problems in the development of this package, such as valve specifications, molding of the outer case, and filling problems, which will not be discussed fully here.

We have an incoming inspection by the quality control department to check the components at a 1.5 per cent A.Q.L. level based on the MIL statistical sample program, and to run the following tests on valve components.

1. *Shelf Life Tests.* Samples of cans are filled, weighed, and stored under various temperature conditions and re-weighed periodically to determine the loss. These results are then checked statistically to determine whether the requirements are satisfactory.

2. *Use Life.* Containers are filled, sprayed, and weighed, stored at room temperature for 24 hours, re-weighed, sprayed, weighed, stored for 24 hours, and re-weighed. This is continued for six successive days. The loss in weight between use is calculated to deter-

(*Continued on page 105*)

THE FILLER'S ROLE IN PHARMACEUTICAL AEROSOLS*

BY ALFRED P. MASON AND JOHN W. HART JOHN C. STALFORT & SONS

Aerosol pharmaceuticals have arrived. It might be well to study this growth, in order to associate the contract filler with the pharmaceutical industry.

I'm sure that many progressive pharmaceutical companies turned their heads to the aerosol industry as soon as there was the slightest rumbling. They took note and watched an amazing industry develop. They noticed the small snowball roll and turn into the mammoth it is today. Many of these companies saw the potential and the advantages of having their products aerosolized. But in spite of the foresight the managements of these companies used, a great deal of credit must go to the CSMA.

Just as the pharmaceutical manufacturer looked to the aerosol industry, the aerosol industry stared right back. They saw a great potential just lying dormant, and decided to do something about it. This was acccomplished by holding a symposium with the cooperation of the Philadelphia College of Pharmacy. This was well attended, and certainly accomplished its purpose. It stimulated a great deal of interest between these two fields. This started the association of the giant pharmaceutical industry with the baby aerosol industry—one which has grown into a young man today. It is still young, and as it matures it will learn many things, but the important thing is that it is young and enthusiastic.

But how did it progress from childhood to the young man it is today? There are many factors, and I don't mean to slight any one of them, but in our opinion this was accomplished by the aerosol filler. His aggressiveness and, I might add, humility, sent him to the door of the pharmaceutical companies. He meekly knocked and, much to his surprise was invited in. He presented his case, which was very simple: "I can't fill pharmaceutical aerosols without your help, and you can't fill them without mine."

At this point, we might mention that aerosolizing pharmaceutical products is not a gimmick, but rather a must. The advantages of longer shelf life, accomplished by (a) the removal of air and (b) freedom from contamination, are very good selling points. Many of us as users have noticed this. How many times have we given vitamin syrup to our children, each time letting more air into the jar, and had difficulty in replacing the top because of crystallized sugar. Also, if we use a dropper, the same dropper is often used to apply vitamins directly into the mouths of our children—is it contaminated?

Who here would like to spread a burn ointment on a first or second degree burn? In dermatological applications, don't you think we are sometimes doing more harm than good by spreading ointments over unaffected areas near the periphery of the infected area? These are just some of the advantages. There

*Presented at the annual meeting of the Chemical Specialties Manufacturers Association, May 1960.

are many others, such as ease of application, especially when for therapeutic reasons an aerosolized form is quicker acting, not to mention applications to areas inside the body cavities that are virtually inaccessible to drops, brushes, swabs, etc.

The pharmaceutical people know better than we that the aerosol has many other uses in their field, and I'm sure these are being developed and researched at this very moment.

Along with our introduction to the pharmaceutical people—a breed usually prone to scepticism concerning other industries—an important consideration is to develop confidence. The filler must convince him that not only has the aerosol industry come of age, but so has he, the filler. We are in a position to process his product with the same quality and conscientiousness that he employs in his own plant. If I introduce you to a friend of mine, in your initial impression or sizing up will be his appearance. Is he neat, well dressed, well groomed? Yes, good housekeeping is very essential at the initial meeting. The filler's plant might be very busy, but to use a trite expression, everything should have a place and everything should be in its place.

We are not interested in packing a product in an aerosol merely because "it's considered a new gimmick"—it must be shown that it has a practical and therapeutic value. Although it is easily forgotten, this group is especially aware of the dangers of producing aerosols that really have no value. As a matter of fact, that is one of the functions of this organization, to help individual members to produce good products so that public confidence is built up rather than destroyed.

The filler or loader may go to the pharmaceutical company with a certain developed product in his hands, but this is really meant to stimulate interest. He would prefer that the potential customer take this idea and expound on it, therefore, making it his own. Once the seeds have been planted, then the development groups in the pharmaceutical companies begin to work on this product idea. This development work is done in conjunction with the filler. In essence, we are saying "Here's an idea, what do you think? We think this is a good approach, but naturally you know more about it than we do." We can supply the information with regards to the propellent. We can tell you about solubilities, compatibilities, and various other aspects concerning the union of the concentrate and the propellent. We can also work on the discharge rate, the amount of active ingredients deposited, the rate of their deposit, and various other aspects of the valve and formula combination. The filler can also provide such services as oven testing or shelf-life determination regarding the formula with respect to the component parts used.

While all these things are going on between the filler's technical staff and the pharmaceutical staff, a very important thing is taking place unbeknown to the parties participating. What could be so important, when those participating do not even know it is taking place? You could call it a sixth sense or a fourth dimension—it is familiarization. Yes, one of the most important keys in any successful undertaking is getting acquainted. Although a road map is a big help in a strange territory, it is far better to have someone with you who knows the way. Once you have been there, you are acquainted with it, and the more you travel that road the better you know it.

Let's assume we have a product that serves a need and for which there is a market. Our next step in this cooperative effort is to discover how we can control it. This enhances many of the things mentioned

(Continued on page 106)

FREDERICK LEWIS PHOTO

SUPERMARKET VERSUS DRUGSTORE

BY L. STAMBOVSKY, Ph.G.

The future form of retail pharmacy is being molded by relentless evolutionary and revolutionary processes. The century-old pathway of goods from producer to consumer is fast disappearing from the American scene and is being replaced by a more efficient means of distribution. American ingenuity, responsible for mass production, has at last been implemented in mass distribution; thus we have self-service. In the beginning, this innovation was applied primarily to packaged foodstuffs; today a housewife may select directly from merchandise ranging from apples to zithers.

Grocery Industry First

The retail grocery industry was first to appreciate and utilize the many advantages of self-service. From an experimental embryo, the self-service, one-stop supermarket has collectively grown into a Colossus with tentacles grasping at every organ of the mercantile body. Retail pharmacy has not yet realized that the grocery store has already syphoned off almost half of the total business in goods formerly purchased in drugstores. Packaged medication, health and beauty aids, and toiletries have been singled out as the most attractive of all nonfood lines by the supermarkets. There are a number of sound reasons for their interest: first, they have discovered that practically all merchandise heretofore more or less exclusively associated with the drugstore, with the exception of prescriptions and certain dangerous drugs, can be included in their operations without any increased effort or expense; second, when the grocery industry learned that packaged medication, health and beauty aids, and toiletries yielded a gross profit of from 33 to 40 per cent, and when they contrasted this markup with the 23 per cent to which they have been accustomed for many years, needless to say their hunger became voracious. This huge differential in gross profit has set off a stampede, especially among the supermarkets, to take over the entire health and beauty business, which, exclusive of prescriptions, totaled about five and one-half billion dollars in 1958. The retail grocery industry is thoroughly familiar with astronomical figures but that figure is, even to them, a tempting piece of high-profit business.

Outside Forces Aiding Supermarkets

The supermarkets are aware that retail pharmacy can offer but feeble resistance to their encroachment. They are utterly contemptuous of the merchandising ability, purchasing power, and financial strength of the corner drugstore. Therefore, they are of the opinion that their seizure of the health and beauty

EXPENDITURES FOR HEALTH AND BEAUTY AIDS, 1958
Individual Items

	Total volume all outlets	Grocery store in dollars	Grocery store percentage of total volume
Vitamin concentrates, non Rx	222,630,000	8,750,000	4
Cough drops, lozenges, troches and gums	41,520,000	6,430,000	15
Cough syrups, elixirs expectorants	69,790,000	7,840,000	11
Cough and cold, ointments and salves	26,670,000	6,500,000	24
Cold tablets, capsules	51,860,000	6,950,000	12
Laxatives	36,450,000	8,600,000	24
Milk of magnesia, liquid	22,610,000	6,420,000	29
Aspirin	65,860,000	29,070,000	44
Aspirin-salicylate compounds	201,420,000	95,780,000	48
Antacids (all forms)	45,000,000	16,770,000	37
First aid products	147,070,000	42,220,000	29
Baby powder	20,520,000	8,920,000	43
Tooth paste	222,590,000	134,730,000	61
Mouthwashes	63,940,000	23,500,000	37
Shampoos	155,900,000	73,540,000	47
Men's hair tonics	66,520,000	25,000,000	38
Razor blades	1118,890,000	65,670,000	48
External personal deodorants	89,650,000	28,900,000	32

EXPENDITURES FOR HEALTH AND BEAUTY AIDS, 1958
General Headings

	Total volume all outlets	Drugstore in dollars	Drugstore percentage of total volume
Packaged medication	1,550,060,000	1,047,880,000	68
Prescription accessories	205,560,000	89,990,000	44
First aid goods	147,070,000	90,030,000	61
Foot products	52,220,000	31,540,000	60
Baby needs	484,510,000	118,030,000	24
Feminine needs	230,520,000	89,990,000	39
Toiletries (all)	2,979,050,000	799,390,000	27
Total for drugs, health aids, beauty aids and toiletries	7,405,840,000	3,826,990,000	52

aid business will not entail an exhausting battle with retail pharmacy. Thus far their judgment seems to be correct. Their ambitions are being effectively assisted by the unremitting efforts of certain agencies to destroy the legal barriers confining the sales of certain drugs and packaged medication to drugstores only. This is meant to include the full drug line with the exception of prescriptions and a few obviously dangerous drugs. Naturally, the grocery industry would welcome the leveling of all restrictions that still limit the sales of certain classes of goods to the retail pharmacy, since the more items that are available, the greater will be their profit. We might sum up this facet of the matter by this statement: The National Association of Food Chains openly declared war on restrictive laws and Fair Trade, admitting that the supermarkets' most important nonfood source of revenue is health and beauty aids, and that such merchandise composes half of all nonfood volume.

Relative Positions of Retail Grocery and Retail Pharmacy

The tables depict the comparative positions of the retail grocery and drug industries in the sales of health and beauty goods. It is apparent that retail pharmacy has lost from 30 to 70 per cent of the sales in merchandise heretofore more or less exclusively associated with the drugstore. A number of salient facts are worthy of mention: in 1947 the drugstore sold about 29 per cent of all cleansing tissues—today his share is only 14 per cent of the total sales in this commodity; sanitary napkins were actually pioneered in the drug store—in 1947 the pharmacist transacted 47 per cent of all sales in this feminine necessity, but in 1958 only 26 per cent remained in his hands. Packaged medication, health and beauty aids, and toiletries generated 93.45 million dollars worth of business in the grocery orbit in 1947; this figure rose to 942.79 million in 1958, nearly a 1000 per cent increase in 11 years. In the year 1947, the retail drug industry showed a grand total of $1,317,-840,000 in sales of packaged over-the-counter medication, health and beauty aids; 11 years later, in 1958, this figure expanded to $2,003,800,000—far less than 100 per cent growth. The 1,000 per cent increment attained by the grocery trade, when contrasted with that achieved by the retail drug business, brings into sharp focus the speed and direction of change in consumer preference.

The Future

In respect to this discussion, no one can predict the future with certainty, although occasionally events of the immediate past suggest with some accuracy events to come. The current situation seems to presage that business in packaged medication, health and beauty aids, and toiletries will be absorbed almost entirely by the retail grocery industry. There are about 318,000 retail grocery stores in the United States—about 298,000 independents and 22,523 supermarkets; the latter claim a volume of 32.4 billion dollars or about 70 per cent of total grocery sales. Their phenomenal growth is further illustrated by their performance between the years 1951, when they sold 12 billion dollars worth of merchandise, and 1959, when their sales reached 32.4 billion. From 1957 to 1958, the retail grocery business as a whole

(*Continued on page 112*)

DCAT Threescore and Ten

BY TED KLEIN

On a bleak, snow-swept evening last winter, over two-thousand men of industry, many from out-of-town, journeyed from their warm offices to the Waldorf, donned their tuxedos, and stood up to be counted at the thirty-fourth Annual Dinner of the Drug, Chemical and Allied Trades Association.

Professionals at the hotel were amazed to find that of the 2560 or so reservations, 2,075 hardy souls had braved the elements to attend. "I can't understand it," said the headwaiter in the Grand Ballroom, "most other organizations would have cancelled the dinner." It was testimony to the strength of the organization, which is celebrating its 70th birthday this year.

Charles L. Huisking, a veteran of 62 years in the drug trade, a long-time member of the association, and its president from 1925 to 1926, recently recalled the reasons for the first affair. "In 1926 we were able to get 150 industry leaders to come to the old Waldorf Astoria. Our first speaker was then Governor of New York, Charles Whitman, our toastmaster was Henry S. Chatfield."

Mr. Huisking, whose son Bill is currently president of the DCAT, remembers that "the trade was still made up of various types of businesses with very little that could be called common ground. I was then a broker representing a number of wholesalers, so it was easy for me to see many of the executives in the industry throughout the course of my business day. But there was no real strength in the DCAT, except that of a few interested members."

According to Mr. Huisking, the annual dinner was born of the need to get top trade executives together socially, so they could see how many common problems they shared.

Sharp Comment

The beginnings of the DCAT were anything but humble—several leaders served as its parents. This origin was chronicled in the trade press by an editorial in the June 4th, 1890 issue of *Oil, Paint & Drug Reporter* under the headline "Organizing The Drug Trade," which said, in part: "The initial steps have been taken for an organization among the wholesale druggists, manufacturing pharmacists, and chemists of this city, and what seemed an extreme improbability until now may eventually come to pass . . . sharp comment has been made on the apathy displayed here . . . the term 'shiftless' has been applied more than once by the out-of-town firms when referring to the go-as-you-please methods in vogue in New York." It also indicated that one Albert Plaut of the firm Lehn & Fink advanced arguments in favor of an association for the discussion of subjects affecting the trade.

Elsewhere in the same paper, an item reported that Mr. Plaut had the support of "favorable remarks" from Messrs. John McKesson, Jr., S. W. Fairchild, Henry Dailley, Jr., T. F. Main, and George J. Seabury.

Left to right: R. A. Clark, J. T. Baker, program chairman; W. J. Schieffelin, III, Schieffelin, treasurer; E. W. Kintner, Federal Trade Commission, speaker; H. L. Booth, secretary; W. W. Huisking, Huisking, president; J. Day, Dow, vice-president; W. J. Quinn, Merck, counsel.

Between that day in June and October 30th of the same year, Mr. Plaut and a dozen others were able to organize a Drug Trade Section of The Board of Trade and Transportation in New York.

The report of the committee, signed by temporary chairman George J. Seabury, called attention to the fact that "nearly every prominent branch of trade and commerce is organized but our own." The heading of the report thus summarized its intent: "A Careful Perusal Is Requested . . . now that we have the opportunity, let us permanently organize the Drug Trade and its allied branches." The branches referred to were wholesale druggists, manufacturing chemists, manufacturing pharmacists, perfumers, and importers of drugs, chemicals, and essential oils. But it was agreed that "by resolution other branches may be added from time to time." There are now nine branches.

THE NINE INDUSTRY CLASSIFICATIONS OF THE DCAT

1. Drug Manufacturing
2. Chemical Manufacturing
3. Drug Distribution (Wholesale, Retail, Chains)
4. Agents, Brokers, Distributors and Exporters
5. Cosmetics and Toiletries
6. Essential Oils, Aromatic Chemicals and Flavors
7. Containers and Packaging
8. Publications, Advertising and Promotion
9. Allied Trades

The 1960 roster begins with the A. & M. Tool & Die Co., Inc. (Saga Packaging Div.) of Southbridge, Mass., and the list of 800 or so members ends with Zenith Laboratories, Inc. of Englewood, N. J. These two firms are by no means the largest—E. I. du Pont de Nemours, Sterling Drug, American Home Products, Allied Chemical, and Owens-Illinois Glass are all members. But along with these and other giants are smaller firms in 225 cities and 35 states of this country, Canada, Mexico, and Newfoundland who are, in fact, the backbone of our economy and the heart and soul of every industrial organization.

DCAT, to provide a closer liaison with its 350 member firms outside of the New York metropolitan area, has set up a nonresident advisory committee. Its eleven members, each representing a major geographical area of the U. S., meet periodically to discuss ways of augmenting DCAT services to its widespread membership, who in turn represent the interests of the nonresident members in their areas.

DCAT Services

No organization could keep growing, and raise its dues from time to time, without keeping its members relatively happy. DCAT dues are now $100 per year for firms within 75 miles of New York—John McKesson, Jr., and his friends paid considerably less than that in 1891!

The first act of the organization, once established, was to make known its views on important legislation pending before Congress. For example, in December 1891, the Committee on Legislation reported having drawn up a bill "in regard to rebate on alcohol used in the manufacture of articles for export." This bill was offered as an amendment to the 25th Section of a law entitled "An Act to Reduce the Revenue and Equalize Duties on Imports, and for Other Purposes."

The voice of the organization was also raised on the Paddock Pure Food & Drug Act of 1892. In that year, the DCAT drew up an official list of tares on original packages of crude drugs. This list of tares, now in its fifth revision, is a standard for the entire industry. Another example of the official status of the

(Continued on page 118)

AEROSOL STATISTICS 1959

The ninth annual Aerosol Pressure Products Survey of the Aerosol Division of the Chemical Specialty Manufacturers Association resulted in an estimate that the total number of nonfood aerosols produced in 1959 in the United States and Canada was 575 million, an increase of about 22 per cent over the 470 million units estimated for 1958.

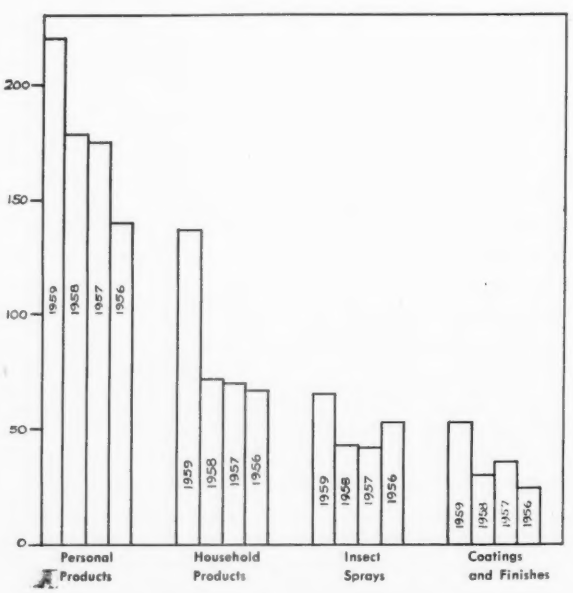
Questionnaires were sent to 217 companies with filling lines (211 in 1958), and of these 19 reported no production and 115 reported in detail (compared with 95 in the preceding year). To reach a more representative estimate, data from container manufacturers and aerosol valve makers were accumulated. Domestic aerosol containers produced and sold for nonfood products as reported for 1959 by seven can companies and a number of glass companies, were 584.0 million units, compared with 472.8 million cans from six companies in 1958. Nine valve manufacturers produced and sold 604.0 million units in 1959, while 10 manufacturers reported 547.8 million in 1958.

Differences between the tabulated data and the estimated total can be accounted for, according to the Product Survey Committee, by deficiencies in reporting in seven categories. In each of the following.

TOTAL AEROSOLS
1959
498,288,000 UNITS

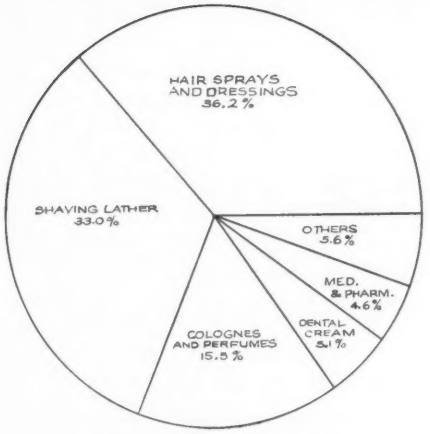
TOTAL AEROSOLS
1958
341,383,500 UNITS

TOTAL AEROSOLS
MILLION UNITS

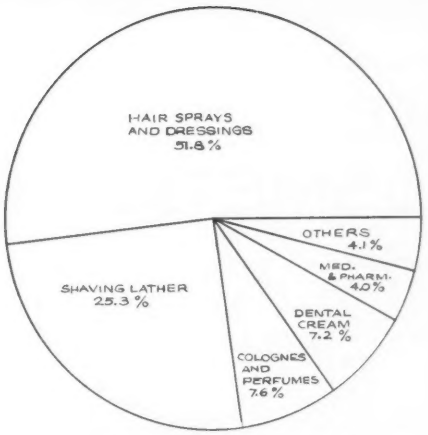


NONFOOD PRESSURE PACKS
Thousands of Units

	1959	% Change	1958	% Change	1957
Personal Products	219,895	+23.0	178,842	+ 1.9	175,583
Household Products	137,333	+90.6	72,063	+ 2.8	70,137
Insect Sprays	65,911	+53.9	42,300	+ 1.7	41,608
Coatings	52,556	+74.5	30,123	—17.5	36,528
Miscellaneous	22,592	——	18,056	——	15,636
Total	498,288	+46.0	341,384	+ 0.6	339,491

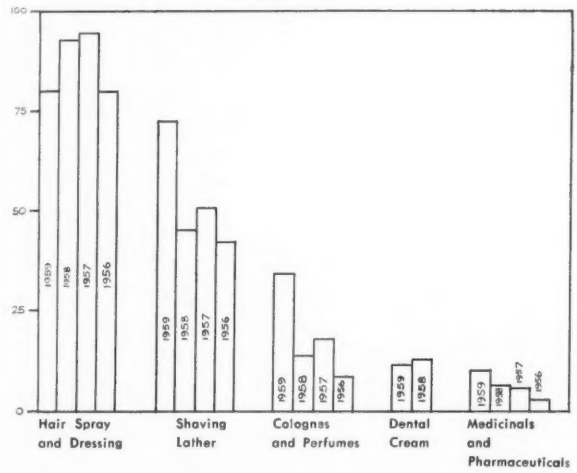


PERSONAL PRODUCTS AEROSOLS
1959
219,895,000 UNITS



PERSONAL PRODUCTS AEROSOLS
1958
178,841,000 UNITS

PERSONAL PRODUCTS AEROSOLS
MILLION UNITS



PERSONAL PRODUCTS
Thousands of Units

	1959	% Change	1958	% Change	1957
Hair Sprays and Dressings	79,687	— 13.9	92,594	— 1.9	94,432
Shaving Lather	72,611	+ 60.2	45,314	—10.9	50,868
Colognes and Perfumes	34,077	+151.3	13,563	—24.2	17,881
Dental Cream	11,242	— 12.9	12,906	——	——
Medicinals and Pharmaceuticals	10,036	+ 40.8	7,130	+22.9	5,799
Others	12,242	——	7,335	——	6,602
Total	219,895	+ 23.0	178,842	+ 1.9	175,583

production should be adjusted upward: Insect Sprays by 15 million, Coatings by 4 million, Room Deodorants by 10 million, Shave Creams by 5 million, Hair Sprays by 20 million, Dental Creams by 4 million, and Cologne by 5 million.

The Committee made a number of observations concerning the data. Hair Spray was again the largest single item, although the total reflected a drop in production. The drop might be ascribed to adverse publicity concerning toxicity and to a patent conflict.

Colognes and Perfumes showed substantial growth. Containers of one ounce and under have become a significant factor.

The new category of Waxes is even larger than shown, since the 12-ounce containers of the product were tabulated as part of Other Household Products.

Data for Coatings are a realistic representation of the market, since most of the companies involved reported.

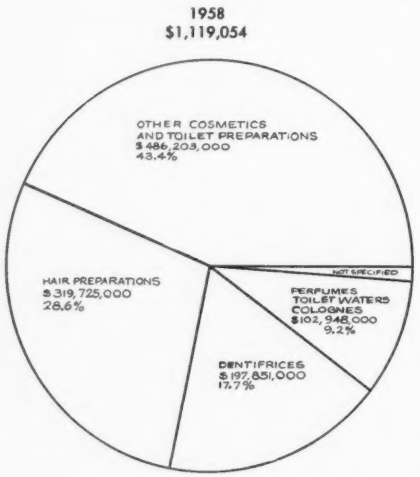
Considering only the tabulated statistics, total aerosol units increased from 1958 to 1959 by 46.0 per cent, from 341,384,000 to 498,288,000. Personal Products are still the largest subdivision, increasing by 23.0 per cent from 178,842,000 to 219,895,000, but this group in 1959 accounted for only 44.2 per cent of the total, compared with 52.4 per cent in the previous year. Household Products increased by 90.6 per cent, or from 72,063,000 in 1958 to 137,333,000 in 1959, respectively 21.1 and 27.6 per cent of the total. Insect Sprays, increasing by 53.9 per cent, totaled 65,911,000 or 13.1 per cent of the total in 1959 and 42,300,000 or 12.4 per cent in 1958. Coatings and Finishes in 1959 accounted for 52,556,000 units in 1959, an increase of 74.5 per cent over 30,123,000 in 1958, the proportion of the total increasing from 8.8 to 10.5 per cent.

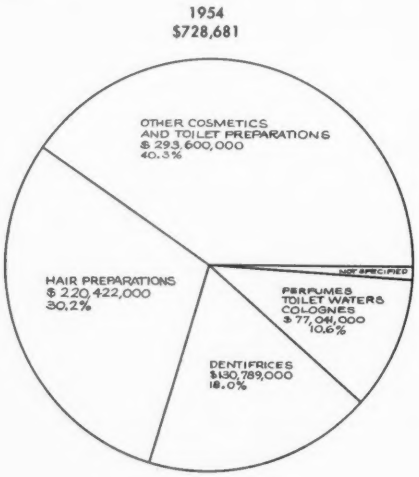
Hair Sprays and Dressings, still the largest group in Personal Products, declined by 13.9 per cent to 79,687,000 units in 1959, compared with 92,594,000 in 1958, a drop from 51.8 per cent of Personal Products to 36.2 per cent. Shaving Lather increased from 25.3 per cent of Personal Products to 33.0 per cent—from 45,314,000 in 1958 to 72,611,000 in 1959—an increase of 60.2 per cent. Colognes and Perfumes were 151.3 per cent higher, increasing from 13,563,000 to 34,077,000 in 1959, or from 7.6 to 15.5 per cent of Personal Products. Medicinal and Pharmaceutical Aerosols increased by 40.8 per cent, from 7,130,000 in 1958 to 10,036,000 in 1959. •

THE COSMETIC INDUSTRY 1958

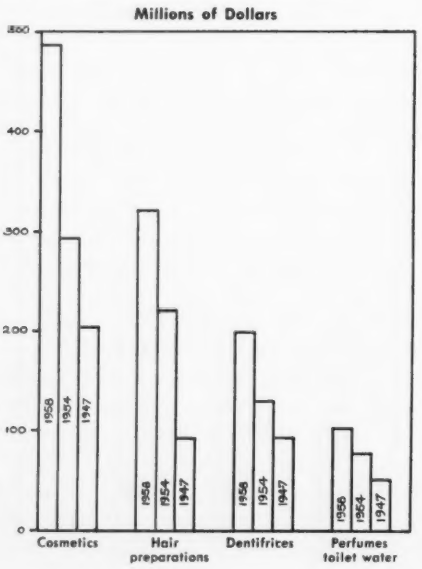
Census of Manufactures data for the Toilet Preparations Industry for 1958 are given in bulletin MC(P)-28H-7, available from the Bureau of the Census, Washington 25, D. C. for 10 cents. We are presenting the data, in comparison with 1954 and 1947 figures, in chart and tabular form for greater ease of comprehension. The figures are authoritative, since manufacturers are required by law to

TOILET PREPARATIONS INDUSTRY





TOILET PREPARATIONS INDUSTRY



TOILET PREPARATIONS

	1958	% Change	1954	% Change	1947
Cosmetics and toilet preparations	$486,203,000	+66.0	$293,600,000	+ 43.0	$205,421,000
Hair preparations	319,725,000	+45.0	220,422,000	+138.8	92,298,000
Dentifrices	197,851,000	+51.2	130,789,000	+ 40.3	93,083,000
Perfumes, toilet waters, colognes	102,948,000	+33.8	77,041,000	+ 53.0	50,322,000
Toilet preparations, not specified	12,327,000	—	6,829,000	—	13,011,000
Total	$1,119,054,000	+53.7	$728,681,000	+ 60.7	$454,135,000

supply requested information; nevertheless classifications are sometimes changed in different census years, and some categories, notably soap shaving preparations, are not included in the announced totals. Dollar values are for shipments by manufacturers and are not retail values; these may be considered to be roughly double the declared manufacturer's value.

During 1958, manufacturers in the toilet preparations industry shipped products valued at $1,046 million, an increase of 57 per cent over 1954, according to preliminary results obtained from the 1958 Census of Manufacturers. Average employment in

the industry showed an increase of 19 per cent from 1954 to 1958, to a total of 29,400 in 1958. Payroll in the same period increased 41 per cent, to $94.7 million. Using comparable totals, including soap shaving products, the value of shipments of toilet preparations was $1,119,054,000 in 1958, 53.7 per cent greater than the $728,681,000 in 1954, which, in turn, was 60.7 per cent greater than the $454,135,000 in 1947. As shown in the charts and tables, these include cosmetics and toilet preparations, hair preparations, dentifrices, perfumes and toilet waters, and unspecified toilet preparations.

Among fragrances, the total for 1958 was 33.8 per cent greater at $102,948,000, with perfume oil mixtures and blends increasing by 78.7 per cent to $24,572,000, solid and liquid perfumes increasing 37.9 per cent to $18,081,000, liquid toilet waters and colognes increasing 39.8 per cent to $55,511,000, solid colognes were 76.1 per cent less, at $1,809,000.

Hair preparations increased by 138.8 per cent from $92,298,000 in 1947 to $220,422,000 in 1954, and then by 45.0 per cent to $319,725,000 in 1958. Soap shampoos were valued at $38,732,000 in 1958, an increase of 87.9 per cent over the $20,628,000 in 1954, while detergent-based shampoos decreased by 1.0 per cent from $57,903,000 to $57,378,000. Home wave kits and refills declined in value by 11.7 per cent from $49,530,000 to $43,692,000. A reversal occurred from 1954 to 1958: in the earlier year, kits were valued at $14,487,000, while refills sold for $35,043,000; in 1958, sales of kits were valued at $42,724,000, while refill sales amounted only to $968,000. In contrast, commercial cold wave preparations sales increased by 53.2 per cent from $11,099,000 to $17,000,000. Outstanding changes were shown in sales of hair dressings, increasing 97.4 per cent from $20,342,000 to $40,100,000; in hair dyes, rinses, and tints, up 127.6 per cent from $14,112,000 in 1954 to $32,162,000 in 1958; and in wave sets, which increased 201.9 per cent from $11,563,000 to $34,845,000.

The increase in dentifrice sales by 51.2 per cent from $130,789,000 to $197,851,000 was due largely to tooth paste sales, which increased 41.2 per cent from $110,825,000 to $156,712,000, and mouthwash sales, increasing 255.2 per cent from $6,177,000 to $21,941,000.

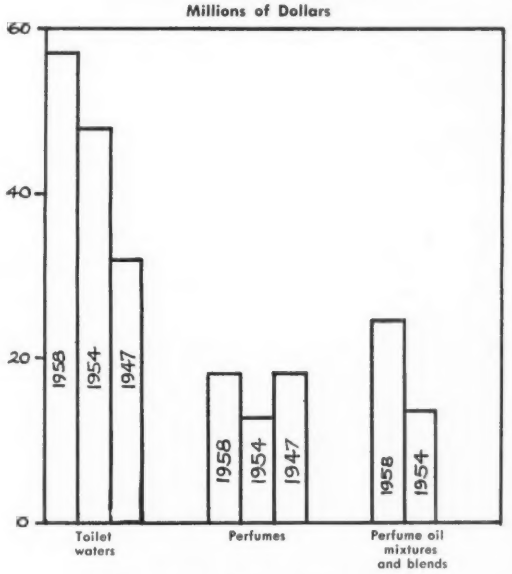
Other cosmetics and toilet preparations in 1958 totaled $498,530,000 in 1958, 66.0 per cent greater than $300,429,000 in 1954. These included a 55.0 per cent increase in creams from $42,150,000 to $65,326,000; an increase of 78.7 per cent in lotions and oils, from $42,211,000 to $75,457,000; makeup items increased 93.5 per cent to $77,897,000 from $40,232,000; personal hygiene products sales increased 57.8 per cent to $68,943,000 from $43,714,000; powders were 75.3 per cent greater, from $55,067,000 to $97,610,000; and shaving preparations increased only 17.0 per cent from $55,220,000 to $64,610,000.

DENTIFRICES

	1958	% Change	1954	% Change	1947
Tooth paste	$156,712,000	+ 41.2	$110,825,000	+ 65.1	$67,085,000
Tooth powder	4,135,000	— 14.8	4,854,000	— 39.0	7,954,000
Denture cleaner	6,257,000	+ 16.1	5,384,000	+145.0	2,198,000
Mouthwashes, gargles, rinses	21,941,000	+255.2	6,177,000	— 54.8	13,657,000
Other dentifrices	8,199,000	—	2,697,000	—	2,189,000
Dentifrices, not specified	607,000	—	852,000	—	—
Total	$197,851,000	+ 51.2	$130,789,000	+ 40.4	$93,083,000

PERFUMES, TOILET WATERS, COLOGNES

Millions of Dollars



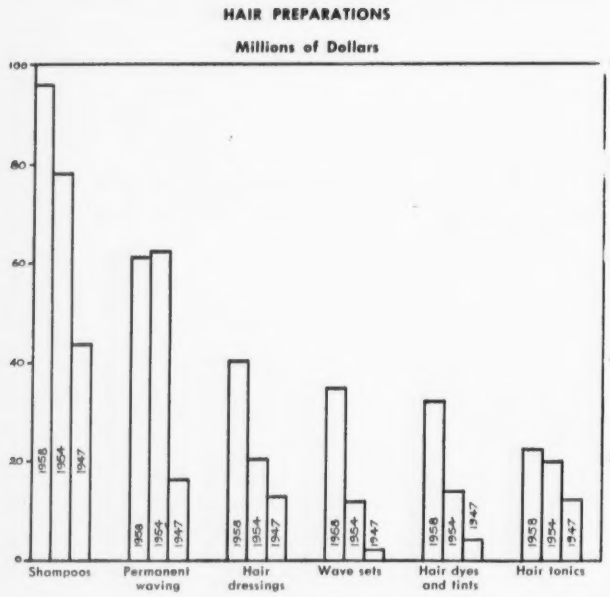
PERFUMES, TOILET WATERS, COLOGNES

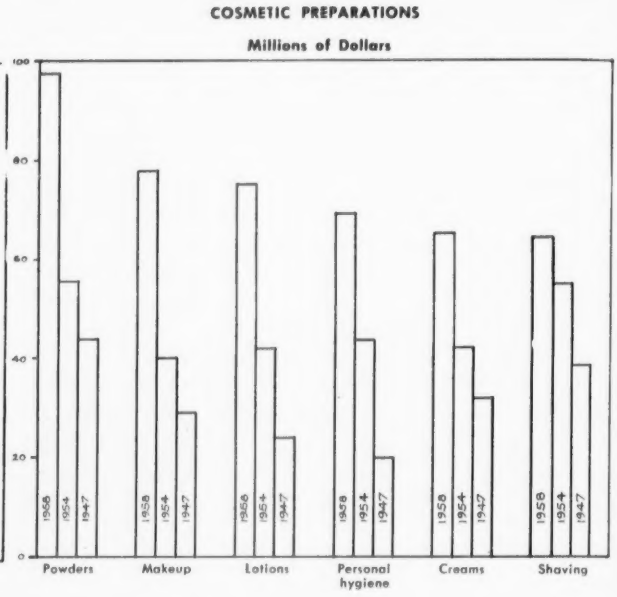
	1958	% Change	1954	% Change	1947
Perfume oil mixtures and blends	$24,572,000	+78.7	$13,764,000	—	—
Perfumes (liquid and solid)	18,081,000	+37.9	13,111,000	—29.9	$18,429,000
Toilet waters and colognes, liquid	55,511,000	+39.8	39,725,000	+48.2	31,893,000
Toilet waters and colognes, solid	1,809,000	—76.1	7,574,000		
Perfumes, toilet waters, not specified	2,975,000	—	2,867,000	—	—
Total	$102,948,000	+33.8	$77,041,000	+53.0	$50,322,000

Comparisons of 1958 with 1947 show a uniform pattern of increase during the decade. The industry as a whole increased by 146.4 per cent from $454,135,000 to $1,119,054,000. This increase was also shown, but to different extents, in the major categories. Perfumes and toilet waters increased in this period by 104.6 per cent, dentifrices by 112.5 per cent, and cosmetics and toilet preparations by 136.7 per cent, while hair preparations showed an outstanding increase of 246.4 per cent.

Within the group of hair preparations, from 1947 to 1958, soap shampoos increased by 168.5 per cent while detergent shampoos showed a smaller increase of 95.8 per cent; hair tonics increased 92.9 per cent; hair dressings 214.3 per cent; hair dyes, rinses and tints 746.4 per cent; wave sets increased from $2,013,000 to $34,845,000, or by 1642.3 per cent.

Cosmetic and toilet preparations include subdivisions of creams, lotions, and oils, makeup, personal hygiene, powders and shaving preparations. Again comparing 1958 with 1947, creams increased by





HAIR PREPARATIONS

	1958	% Change	1954	% Change	1947
Soap shampoos, liquids, pastes, creams, jellies	$ 38,732,000	+ 87.9	$ 20,628,000	+ 43.2	$14,423,000
Detergent shampoos, liquids	41,520,000				
Detergent shampoos, pastes, creams, jellies	14,383,000	— 1.0	57,903,000	+ 97.5	29,294,000
Other detergent shampoos	1,475,000				
Hair tonics	22,856,000	+ 16.5	19,632,000	+ 65.8	11,851,000
Permanent wave solutions					
Heat setting	557,000	— 60.6	1,413,000	— 1.4	1,435,000
Cold home wave kits	42,724,000		14,487,000	——	——
Cold home wave refills	968,000	— 11.7	35,043,000	——	——
Commercial cold wave	17,000,000	+ 53.2	11,099,000	— 25.1	14,823,000
Hair dressings	40,100,000	+ 97.4	20,342,000	+ 59.5	12,764,000
Hair dyes, rinses, tints	32,162,000	+127.6	14,112,000	+272.0	3,795,000
Wave sets	34,845,000	+201.9	11,563,000	+474.5	2,013,000
Other hair preparations	24,775,000	——	8,181,000	——	1,768,000
Hair preparations, not specified	7,628,000	——	6,019,000	——	132,000
Total	$319,725,000	+ 45.0	$220,422,000	+138.8	$92,298,000

COSMETICS AND TOILET PREPARATIONS

	1958	% Change	1954	% Change	1947
Cleansing creams	$24,211,000	+ 48.4	$16,305,000	+ 47.1	$11,081,000
Foundation creams	6,829,000	+ 8.9	6,273,000	+ 52.7	4,109,000
Lubricating creams	19,789,000	+143.2	8,138,000	+ 22.5	6,637,000
Other creams	14,497,000	——	11,434,000	——	10,420,000
Total creams	65,326,000	+ 55.0	42,150,000	+ 30.8	32,247,000
Suntan lotions and oils	8,515,000	+445.5	1,561,000	+175.9	566,000
Cleansing lotions	12,609,000	——	——	——	——
Cosmetic and baby oils	6,821,000	+ 6.1	6,434,000	+118.0	2,954,000
Hand lotions	36,825,000	+ 66.8	22,081,000	+ 58.9	13,904,000
Other lotions	10,687,000	——	12,135,000	——	7,661,000
Total lotions and oils	75,457,000	+ 78.7	42,211,000	+ 72.4	24,519,000
Lipstick	44,432,000	+ 87.6	23,711,000	+ 51.3	15,673,000
Rouges	4,709,000	+129.2	2,056,000	— 49.2	4,041,000
Mascara, eyeshadow	10,235,000	+611.0	1,440,000	— 36.5	2,270,000
Manicure	18,521,000	+ 42.3	13,025,000	+ 80.4	7,214,000
Total makeup	77,897,000	+ 93.5	40,232,000	+ 37.9	29,198,000
Liquid deodorant	23,332,000	+ 73.5	13,457,000	+579.0	1,982,000
Cream deodorant	15,165,000	— 18.1	18,510,000	+ 61.6	11,465,000
Other deodorants	16,312,000	——	3,174,000	——	436,000
Depilatories	2,102,000	— 29.1	2,964,000	+165.3	1,118,000
Bath preparations	12,032,000	+114.3	5,609,000	+ 21.3	4,620,000
Total personal hygiene	68,943,000	+ 57.8	43,714,000	+ 47.8	29,621,000
Talcum and toilet powder	44,806,000	+ 60.3	27,957,000	+ 30.8	21,370,000
Face powder	22,139,000	+ 67.7	13,205,000	— 3.4	13,665,000
Liquid and compact powder	13,369,000	+ 54.8	8,639,000	+124.3	3,846,000
Other powders	17,296,000	——	5,866,000	——	5,362,000
Total powders	97,610,000	+ 75.3	55,667,000	+ 25.8	44,243,000
Brushless shave tube and jar	6,108,000	— 26.0	8,249,000	— 17.3	9,972,000
Brushless shave aerosols	4,923,000	——	——	——	——
Lather shave tube and jar	5,129,000	— 24.5	6,799,000	— 32.2	10,027,000
Lather shave aerosols	12,957,000	— 25.7	17,434,000	——	——
Shaving stick, cake, powder	3,560,000	+ 22.1	2,916,000	— 46.0	5,405,000
Aftershave lotion	27,836,000	+ 42.7	19,524,000	+ 58.8	12,297,000
Other shaving preparations	4,097,000	——	298,000	——	1,011,000
Total shaving	64,610,000	+ 17.0	55,220,000	+ 42.8	38,712,000
Other cosmetics	13,622,000	——	6,327,000	——	16,315,000
Cosmetics not specified	22,738,000	——	8,079,000	——	——
Toilet preparations not specified	12,327,000	——	6,829,000	——	13,011,000
Total cosmetics	$498,530,000	+ 66.0	$300,429,000	+ 37.5	$218,432,000

102.6 per cent, lotions and oils by 207.7 per cent, makeup by 166.7 per cent, personal hygiene products by 132.9 per cent, powders by 120.6 per cent, and shaving preparations by only 66.9 per cent.

Within the group of creams, the greatest relative increase in the 1947 to 1958 period was shown by lubricating creams, 198.2 per cent, followed by cleansing creams, 118.5 per cent, and foundation creams, 66.1 per cent.

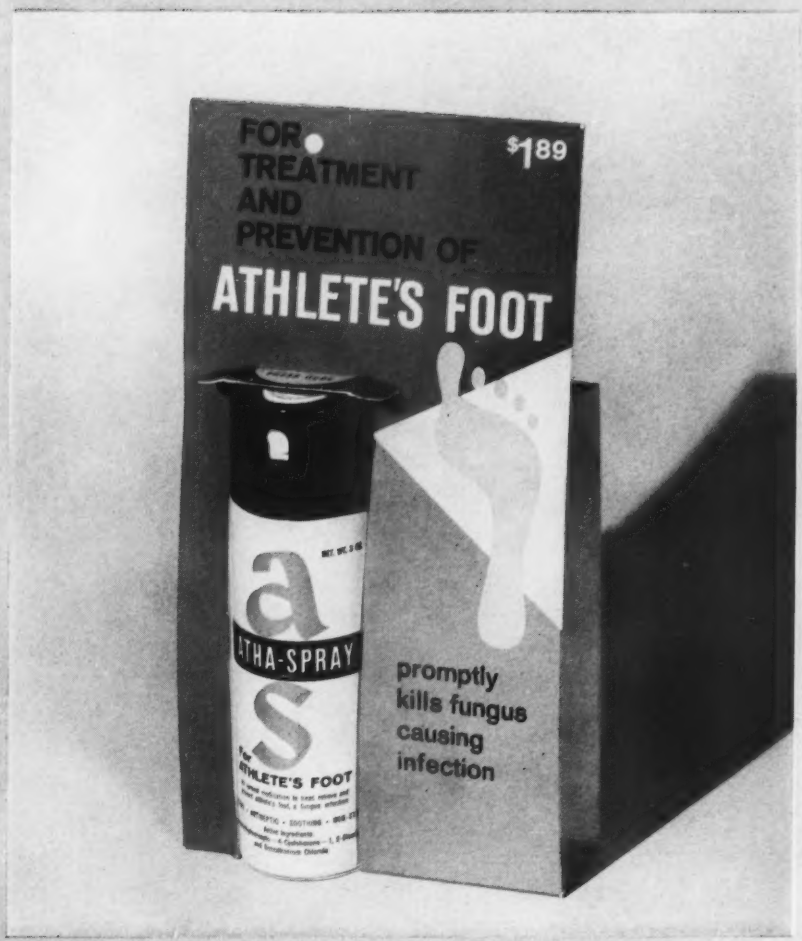
Hand lotions, accounting for approximately half of the lotions and oils, increased by 164.9 per cent from 1947 to 1958.

Among makeup preparations, rouges showed little change, increasing by 16.5 per cent in the period, while lipsticks increased by 183.5 per cent, mascara and eyeshadow by 350.9 per cent, and manicure preparations by 157.2 per cent.

All deodorants, totaling $54,809,000 in 1958 and $13,883,000 in 1947, increased by 294.8 per cent. Among powders, the greatest proportional increase was in liquid and compact powders, from $3,846,000 to $13,369,000.

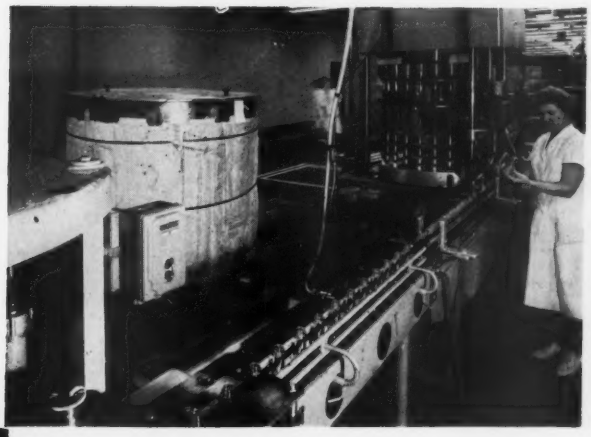
After shave lotions, among shaving preparations, increased 126.3 per cent, from $12,297,000 to $27,836,000. •

Packaging and Selling

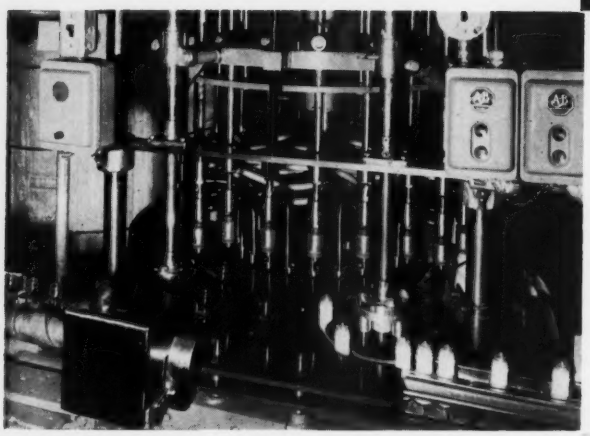


Atha-Spray, athlete's foot medication
introduced by Youngs Rubber Corporation, is the first aerosol can in the field with no cap to remove before application. Gold, white, and black design by Dixon & Parcels Associates, Inc., on can by Peerless Tube Company; cap by Metal Fabrications, Inc.; display card and boat by Lebanon Paper Box Mfg. Company—the card's stylized footprint is pink. Boat of six cards occupies less than one square foot of space. Punch hole is for peg display.

A NEW DEODORANT PACKAGING LINE



Operator examines bottles cleaned by Sanitair Air Cleaner (left) and taken from line moving toward MRM 24-spout automatic rotary vacuum filler (right). Tank at left, background, holds deodorant for filler.



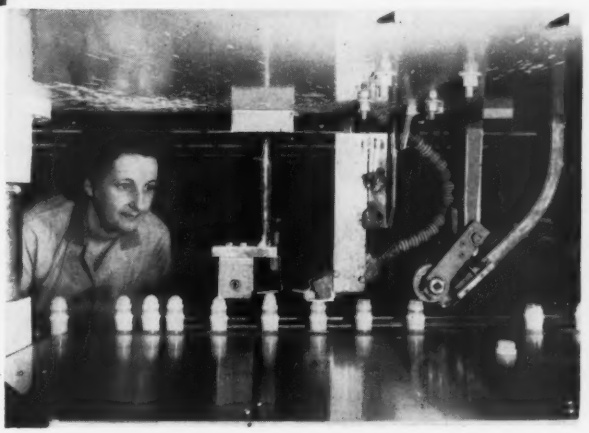
Filling process, from left to rgiht; bottles entering MRM filler to receive spout for gravity filling. Machine has no-bottle, no-fill feature. Filling spout's valve opens only upon contact with the actual bottle.

When Carter Products, Inc., transferred its production facilities into a new plant at Cranbury, N. J., early this year, it gave the company an opportunity to improve its "Arrid Whirl-in" deodorant packaging line. The result is a highly automated and flexible operation that increased production by 50 per cent while significantly reducing the number of worker hours required to meet production requirements.

"Our aim," explains George Kaufman, packaging engineer, "was a versatile packaging line that could meet increased output requirements without significant increase in personnel or worker hours."

Among the new equipment in the line that has helped to achieve this is a machine that applies both the plastic fitment receptacle and the roll-on ball insert to each container in a single automatic operation. The machine operates in tandem with an automatic, high-speed screw capper. Manufactured by Resina Automatic Machinery Company, Inc., Brooklyn, New York, both the applicator and capper are controlled by a single operator and insert roll-on assemblies and caps at speeds 50 per cent greater than that previously achieved by eight manual workers.

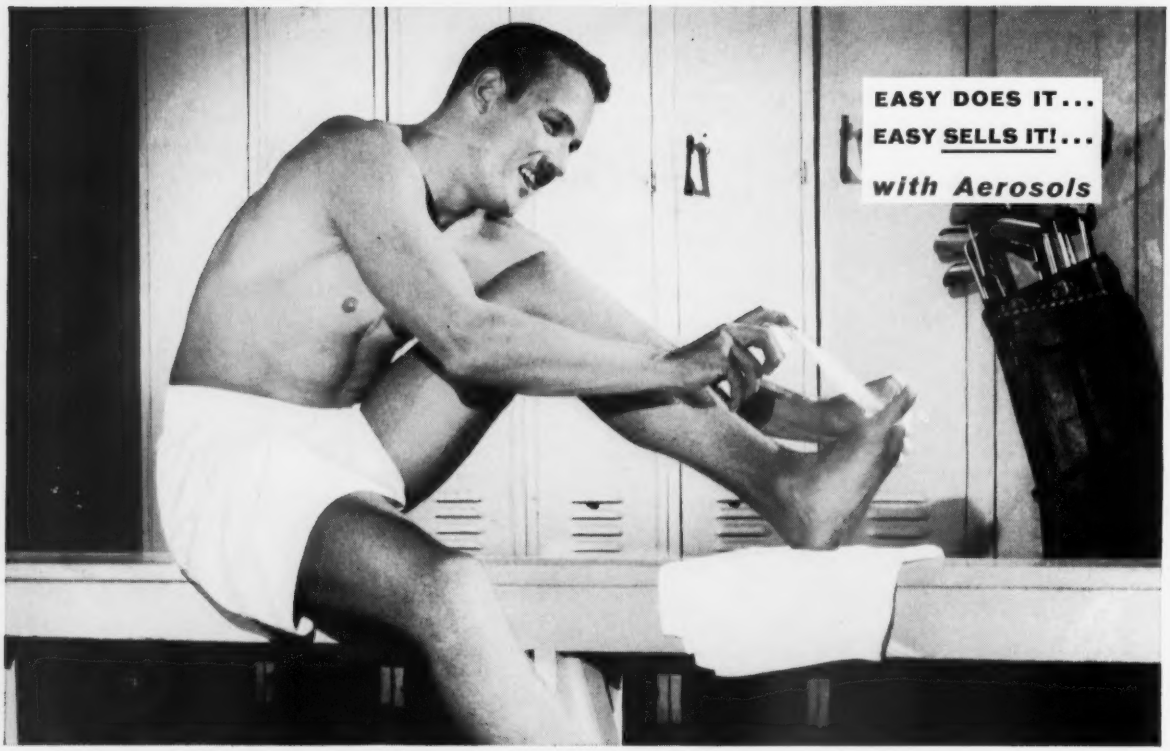
Another key unit is a 24-spout automatic gravity filler developed by MRM Company, Inc., Brooklyn, New York. Operating at the line's 150-unit-per-minute speed, this machine replaces two twin-head piston fillers which together produced 100 units per minute. The new filler eliminates the problem of foaming during filling, thus preventing underfill and assuring uniform and accurate fills.



Complete operation of Resina DBA Ball and Fitment Applicator, from left to right: single, straight-line operation machine applies a plastic fitment receptacle, a roll-on ball, and tamps ball into receptacle.

The line handles 1-oz. and 1½-oz. glass containers. Easily adapted for change in bottle size, its machines require only change parts to go from production of one size to the other. Changeovers are made rapidly after working hours, so that no production time is lost in the process.

The output of the Arrid line in New Jersey is supplemented by that of another line comprised of virtually the same machines at Carter's Momence, Illinois plant.



The Magic Touch of Aerosol Packaging could be your Rx for bigger pharmaceutical sales

Ever ask yourself these questions? *Would my pharmaceutical product be "better" as an aerosol? Would aerosol packaging make it easier to use or more acceptable? Would it generate more sales? Would it yield a better margin of profit?* Chances are, if your product can be sprayed, poured, dusted or daubed the answer to all these questions is *yes!*

Last year sales of aerosol pharmaceuticals jumped to 14 million units valued at $23 million*. This was an increase of 50% in 1959 over 1958 . . . and the market is still growing fast. By 1961 aerosol pharmaceutical sales are expected to exceed $60 million!

Right now's the time to plan on capturing your share of the booming aerosol pharmaceutical market. And to help you get started in aerosol packaging of your medicinal product, General Chemical offers many valuable services.

Forward Research

As an extension of its own aerosol research and development program, General Chemical has initiated a grant-in-aid program at a large eastern college of pharmacy expressly for the study of pharmaceuticals in aerosols. Such research on all phases of pharmaceuticals as aerosols will help accelerate development of many new products. Also, advance research in our aerosol laboratories has led to the development of typical formulations for a number of new or improved aerosol products. These are available to interested marketers.

Contract Fillers

We will also be glad to put you in touch with highly capable contract fillers, who can put up small test runs for you or handle full-scale commercial production. They will work with you from planning and testing through to volume filling. You don't have to invest a cent in equipment or production personnel when you work with these contract fillers!

For further information—or if you would like to arrange for a special presentation—write today to "Genetron" Dept., General Chemical Division, Allied Chemical Corporation. *Estimated by Market Surveys Dept., General Chemical Division, Allied Chemical Corporation

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Putting the "push" in America's finest aerosols

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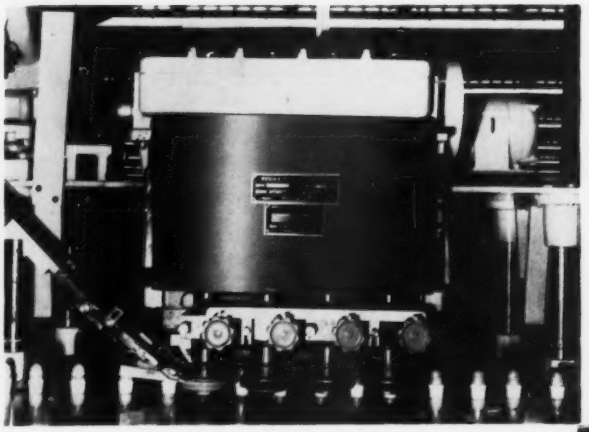


Working in tandem with Resina DBA, the Resina RU-200 capper that applies polystyrene screw cap tightening it with four pairs of wheels. Air-tight bottle is easily opened. One operator supervises both machines.

Before filling and capping operations begin, each bottle is thoroughly cleaned of any impurities that may have entered during transit. The cleaning is performed by a Sanitair Air Cleaner manufactured by U. S. Bottlers Machinery, Chicago. Rotary in operation, the cleaner thoroughly processes each bottle, then shunts it back onto the conveyor for filling.

The MRM 24-spout rotary filler is a completely automatic machine equipped with rubber tipped spouts that descend to make contact with the empty bottle. The contact opens the spout's valve, allowing gravity flow of the liquid into the bottle. Use of gravity fill prevents foaming and subsequent underfill.

The roll-on assembly is applied in a continuous straight-line, automatic operation by the Resina DBA Fitment and Ball Applicator. The plastic fitment, on which the rolling ball is subsequently placed, is fed by a hopper into a chute. A set of arms then restrains the fitment until contact with the conveyor-borne glass bottle removes and places the fitment. The next fitment on the chute then automatically moves into pickup position. The polystyrene rolling ball is then applied in the same manner. It first rests on top of the fitment receptacle and is inserted when the container passes under an arm that is positioned to supply sufficient pressure to push the ball into the receptacle.

The Resina RU-200 capper puts on and tightens the polystyrene cap that covers the rolling ball assembly. Using the same hopper, chute, and restraining arm principle as the Fitment and Ball Applicator, the capper puts the screw cap on the glass bottle. The conveyor then carries the bottle past four pairs of turning wheels, each of which progressively tightens the cap. The result is a bottle capped with sufficient pressure to provide an air-tight seal, yet one easily opened by the purchaser.

Arrid bottles gathered in an Island Accumulator before feeding into a Model 160 New Jersey Heat Seal Labeler, which attaches a pressure-sensitive label (above). Final manually assisted operation shown below.

Final job is packaging individual bottles in individual cardboard containers (above). Jones Constant Motion Cartoner opens cartons for insertion of bottles, then closes each, before packaging in dozen lots.

Filled and capped, the bottles are gathered in an accumulator manufactured by Island Equipment Corp., Miami, Fla., and fed into a Model 160 Heat Seal Labeler manufactured by New Jersey Machine Corp., Hoboken, N. J. This machine attaches a pressure-sensitive label.

The first manually assisted operation on the line comes with the insertion of the bottle into its individual cardboard container. A Jones Constant Motion Cartoner manufactured by R. A. Jones and Company, Cincinnati, Ohio, opens folded cartons for hand insertion of the product, and closes the cartons afterward. Individual cartons are then placed in chipboard containers holding one-dozen units, which are then placed in shipping containers.

The Arrid line is not only offering increased production with reduced total worker hours, but is doing this with a reliable, versatile arrangement that is still flexible enough to adapt to further changes in production capacities and package sizes, should these be called for. •

OPAL . . . the aristocrat of glass

Here indeed is the glass container at its finest . . . sparkling, white opal made to Carr-Lowrey's superior standards of excellence.

The bottle #100, and the jar, #447, provide unsurpassed packaging possibilities for an exceptionally wide range of products. Number 100 is presently available in 4, 6 and 8 ounce sizes. Number 447 in 1, 2, 4 and 8 ounces. All can be supplied plain or decorated to your specifications.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • New York Office: 415 MADISON AVE. • Chicago Office: 1572 MERCHANDISE MART

Packaging and Selling

Just think of it. A panel of 50 West Coast executives representing management and marketing consultants concluded that the product is an important part of sales success!

According to these executives, "Neither a private brands' advantageous price nor a national brands' advertising push assures a healthy sales position."

Dr. Ernest Dichter, renowned in marketing circles for his pithy conclusions, warned that many national giants and well-accepted retailer brands have "sales with feet of clay."

We are almost, but not quite, used to the idea that if you have $2 or $3 million to spend with a good agency, nothing else is very important; or, if you do not have all this money, at least you should have enough for some clever bribery at the point of sale; or, if neither of these things is possible, at least be as smart as all get-out with a new package. Then success is around the corner.

It is startling—and it must be a sign that we are entering a new period of something or other—to have so many people simultaneously discover that none of these things really amounts to much, even over a fairly brief period, unless the product has what it takes.

Generic Name Products, which has recently been very much in the news because of the Washington hearings, may come more and more into the limelight as another method of selling giving extra worry and harassment to the brand name manufacturer, who is already perturbed over private-label products.

A recent page advertisement in *Drug Topics* by West-ward Pharmaceuticals, Inc. of New York City, who cite themselves as a pioneer in generic name who cite themselves as a pioneer in Generic Name pharmaceuticals, makes this statement. "The Westward catalog is an excellent index to the true and current market value of over 400 pharmaceutical products listed only under generic names."

It was bound to happen sooner or later. That is, the well-organized drug line that will confine its distribution and all of its marketing to the supermarket.

In a recent issue of the newspaper *Super Market News*, in a two-page spread, the White Shield Corp. of New York announced "the first franchise supermarket drug brand, 'White Shield.' "

This is to be a nationally advertised line with, according to the advertiser, merchandising innovations and selling devices never before seen in supermarket merchandising. Also, products that are pre-tested, pre-priced, carded, and blister-packed for supermarket display. Also, according to this advertisement, the 100 present products will sell for 20 to 40 per cent below drugstore competition and give the supermarket operator a full 40 plus 2 per cent.

Premiums came in for some frank criticism during *McCall's* Third Annual Drug Seminar. Drug executives agreed that a great many premiums have been on the ridiculous side.

The consenus seems to be summed up in the following quote: "We welcome anything that will create sales, but we are turning down many premium offers today because they are too ridiculous or unrelated, the items are pure junk, or they offer competition to items we are trying to sell."

Colgate has a new soap now being market-tested which appears to be in direct competition with cosmetics and skin care.

This is a premium-price soap and is offered in three different formulations with three different colors. These three formulations will provide a soap that is useful for dry, oily and normal skin.

The Richmond Times-Dispatch and the Richmond News Leader have just come up with an interesting survey that brings out the following points:

1. The percentage of all adults who like advertising in a specified media together with the degree of accumulative audience.
2. The percentage of adults who usually note advertising in specified media, again with the weight of accumulative audience.
3. The percentage of all adults who believe in the honesty of advertising in specified media with the accumulative audience.
4. The percentage of adults who get helpful information from advertising in specified media with the accumulative audience.

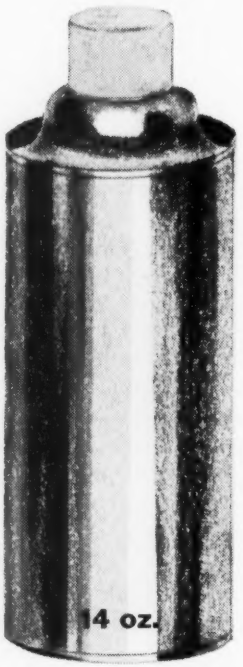
The Mennen Company has just announced a substantial organization realignment. Five distinct product lines have been established, that is, Mennen's Men's Line, Baby Magic Products, Date-Line Prod-

Only Crown Makes Every Aerosol Can You will Need!

Crown is the largest manufacturer of aerosol containers—and the only supplier to offer you all types

TASK-DESIGNED aerosol cans by Crown meet all your requirements, and meet them efficiently! Whether your product demands the exclusive, seamless Spra-Tainer® or can be packed in a conventional 3-piece aerosol can . . . whether you want 6, 8, 12, 14 or 16 ounce capacities . . . come to Crown for reliable aerosol containers!

Come to Crown for reliable advice, too. The first production-line disposable aerosol can was produced by Crown, and Crown has led the field ever since. Take advantage of this vast backlog of experience—write today for more information.



CROWN

for cans · crowns · closures · machinery

CROWN CORK & SEAL CO., INC., 9300 Ashton Rd., Philadelphia 36, Pa.

ucts, Family Products, and Proprietaries.

In addition, this leading mass distributor of men's toiletries will shortly put on the market, in a regional market test, a higher priced prestige men's line called Citation.

Along with this organization realignment go more than a dozen executive changes in various departments.

A Daniel Starch survey was recently made for a Boston newspaper concerning a scented advertisement. This was an orange sale by a local supermarket. The advertisement was, of course, scented with orange.

In the survey this particular ad was observed by 70 per cent of all women reading the paper, the highest record of advertising readership for that issue.

Drugstore prosperity has been based largely on the growth of the five professional departments.

According to the last annual survey of the *American Druggist*, these five departments have expanded from 45.4 per cent of store sales in 1954 to the present 51.0 per cent of sales in 1959.

These five divisions of professional sales are divided as follows in percentage of total store volume:

Prescriptions	26.9
Over-counter ethicals	7.2
Advertised remedies	10.2
Rx accessories	4.0
Health supports	2.7

During the last four years there was a slight drop of advertised remedies from 10.5 to 10.2 per cent. On the other hand, both prescriptions and over-counter ethicals made a gain of around 10.0 per cent.

The sale of toiletries and cosmetics, as a percentage of store volume, held a rigid evenness during these four years. In 1956 it was 10.3 per cent of store volume, and in 1959 it hit that same percentage figure right on the nose.

The departments showing some loss in the drugstores include the fountain, ice cream, candy, tobacco, magazines, and liquor.

According to the latest figures by *Variety Store Merchandiser*, the sales volume of drug and toiletries in the 11 billion variety-general merchandise stores amounted to $272 million in 1958 and about the same ratio of business in 1959.

Variety stores' share of the total drug market is estimated at 10 per cent; 16.5 per cent of the total cosmetic market; 20 per cent of the total hair goods market; 17 per cent of the shaving products market; and 8 per cent of dental goods.

In a great many product classifications the sales of variety stores are substantially greater than that in food outlets. Chief among these products are makeup bases, face powder, and nail polish.

According to this magazine, eye shadow and mascara suddenly captured the beauty spotlight last year. Then, another product—the eyeliner—came on the scene, making for multiple sale tie-ins to the swelling legion of eye-conscious females. This has been followed with a mounting demand for eyebrow pencil as well.

According to a nail enamel manufacturer in this field, pure silver enamel is the current best seller in the fashion field. The runners-up, out of a total of 64 shades, include natural, dusty rose, pure red, and coral. These five shades have captured the bulk of the business.

The Glass Container Manufacturers' Institute has just released the latest edition of its fact book on glass containers. Some of the information from this book follows.

During 1959 domestic shipments of medicine bottles amounted to 3,100,320,000 units. Cosmetic containers, for this period, came to 1,939,392,000 units.

The combined totals for drugs and cosmetics amounted to 23.3 per cent of all domestic shipments of glass containers.

During this period shipments increased in all categories for this industry.

There is a new pamphlet destined to acquire a well-thumbed look in many company offices. It is a new guide prepared by the Federal Trade Commission's Robinson-Patman task force. This guide, written for businessmen, for laymen, explains in nonlegal language exactly what the law permits and what it forbids in furnishing any co-op advertising payments and other special services. It is divided into the following sections:

1. When does the law apply?
2. Who is a seller?
3. Who is a customer?
4. What is interstate commerce?
5. What are services or facilities? Under this section are listed a wide variety of services, together with a large number of typical examples.
6. Need for a plan, which includes such substantial divisions as the requirements of payments or services that must be available in proportionally equal basis to all competing customers. Also, the seller should take some action to inform all of his customers who compete with any participating customer that the promotion is available. Also, the plan must either allow all types of competing customers to participate or provide some other means of participation for those who cannot use the basic plan. Also, the seller and customer should have a clear understanding about the exact terms of the offer and the conditions upon which payments will be made for services and facilities furnished. Also, the seller must take reasonable precautions to see that the services are actually furnished, as well as that he is not overpaying for them.
7. A discussion of proportionally equal terms with several typical examples cited.

8. The seller's duty to inform.
9. Covering all competing customers (with a number of typical examples).
10. The need to understand terms.
11. Checking the customer's use of payments. Here it is stated, "the seller must take reasonable precautions to see that the services he is paying for are furnished and also that he is not overpaying for them.
12. Competing customers (with a number of examples).
13. Indirect payments.
14. Meeting competition in good faith.
15. Cost justification.
16. Customer's liability.

The use of aerosols is spreading, indeed, it is growing so rapidly that anyone would expect a certain amount of turbulence.

One of the difficult decisions in this particular branch of packaging is when to "do it yourself" in aerosol filling. At the present time, a number of cosmetic manufacturers have taken the step, including Avon, Shulton, Revlon, Rexall, a few smaller companies, and such associated companies as Stanley Home Products and Fuller Brush.

A rule of thumb frequently quoted states that the time to switch is at one million units a year. However, a very large manufacturer in the household products field has just switched to its own aerosol packaging with the statement that such a plant was really not economic until the 13-million-unit mark had been passed.

The aerosol industry has grown by means of the contract filler. These people have had a booming, hectic, troublesome growth beset by price cutting, new technical developments and everything else that new industries encounter.

So far, although more than 150 companies are now doing their own filling, the contract filler has not been bothered. This is because of the rapid expansion of the industry and the entry each year of so many new customers.

Probably the aerosol still has an area of expansion which can keep everybody busy. If it is true, as some people in the industry are saying, that this year it's the pharmaceutical industry's turn, certainly there is plenty of volume there to account for a good, husky expansion.

A great debate seems to be going on as to whether men hold the good old tube of shaving cream in their right hand or their left hand when they are in operation.

At any rate, according to one report, a package designer has been debating with the Burma Shave people for two and one-half years in an effort to persuade these folks to change the old tube.

Here is the argument that won. "Most men are right-handed. But if held in the right hand, the name on the old Burma Shave package would be obscured and the lathering directions would be upside down."

As a result, Burma Shave will soon have a new tube in which a man holding the tube with his right hand will have an unobstructed view of the name Burma Shave and lathering directions will be right side up.

What is more, the Burma Shave sign is directly on the top of the tube, so the sign is the last thing rolled into oblivion as the shaving cream is used.

This is going to be tough on people who pick up a tube of Burma shaving cream with the left hand because then all the instructions will be upside down.

The 21st Survey of Beauty has just been published by the Dell Modern Group, which includes Modern Screen, Modern Romances and Screen Stories.

This is a comprehensive study of cosmetic buying habits and includes the percentage of sales, various trade-mark names by city size and by yearly income group, as well as the place of purchase. Included also is a table which shows the percentage of use from year to year.

The Seattle-Times has just issued the 1960 Consumer Analysis on its metropolitan market. This study includes a cosmetic section.

According to the magazine *Super Market Merchandising*, here is the status of a typical supermarket in the United States.

The transactions average 5,500 per week with an average transaction value of $5.05. The selling space produce $2.98, and sales for a family average $623.00 a year.

Out of total supermarket sales last year, health and beauty aids did 2.5 per cent of this total volume with a dollar value of $811,000,000.

One of the hottest discussions in marketing circles today is cooperative advertising. Most retailers and manufacturers support it, but they are willing to admit that cooperative advertising is loaded with unfair practices, uneconomical practices and, without any question, illegal practices.

Ever since the Robinson-Patman Act, cooperative advertising has been skating on very thin ice. If this act had been an enforceable law with anything about it that could gain respect from lawyers, retailers, or manufacturers, something would have been done long ago. But the truth is that, among all the things that make this an impractical and probably an impossible law to enforce with any degree of fairness, justice, or equity, cooperative advertising probably heads the list.

All this has not at all been helped by the Federal Trade Commission charge that R. H. Macy Co. is using its strength as a big buyer to force suppliers to make contributions in cooperative advertising that are contrary to a violation of a basic principle of the Robinson-Patman Act.

Out of 750 suppliers approached by Macy in connection with the celebration of their 100th anniversary, over 400 have signed up for cooperative advertising under the store name at this time. According to the FTC, hardly any of these suppliers, in fact few of the total number approached by Macy, were in any position to offer equal terms to their other retail customers in proportion to the amount of money exacted from them by Macy for cooperative advertising under the name of this one dealer.

A number of cooperative advertising cases seem to be in line for FTC citations. It must be admitted that expenditures for cooperative advertising in plain violation of the elemental, if mistaken purpose of this act, is running wild through almost every industry selling packaged branded merchandise to retail stores.

Probably, if the FTC cited every case that they could readily lay their hands that is in violation of the Robinson-Patman Act in cooperative advertising, their entire legal force would be out of circulation for the next ten years.

Both branches of this trade increased their TV billing during 1959.

Cosmetics and toiletries moved up to 131,096,620 from 126,107,799, an increase of 4 per cent, and drug products moved up to 123,449,521 from 98,224,-639, an increase of 25.7 per cent.

One of the leading package designers, Frank Gianninotto, believes that the hard-sell package which rises above competition and gives top visibility at the point-of-sale and which, therefore, inspires an impulse purchase, is not quite enough. What does count is the package that communicates with the consumer, that causes her to imagine herself owning the product, and that promises "a pleasant after-glow."

This after-glow is a new plus promoted by this package designer. As an example, he recommended a package for a cleansing preparation that did not suggest a powerful, fool-proof, disinfecting chemical compound but rather sweet-smelling cleanliness—the "after-glow."

In another case cited, cold cream packages should express the consumers' wishes, beauty and romance, not purity or hygiene.

What may be an epic step forward for the United States and world-wide medicine is the fact that Lederle Laboratories shipped four tons of polio vaccine from New York to West Berlin without refrigeration, by jet. Flying time was ten and a half hours.

Purchasing agents believe that they can save a company a lot of money and headaches if they are allowed to coordinate packaging activities.

This is the story told at the Packaging Show in Atlantic City.

The purchasing people's contention: "Purchasing is the ideal spot to coordinate packaging efforts. It's right here the decisions are made to buy both packaging equipment and packaging material, and it's right here that coordination between our own company departments can be most profitably effected.

Production and engineering are always looking for faster filling packages—packages that are easier to handle. Traffic wants to work with lighter packages—as light as possible and yet strong enough to protect the product and comply with regulations. Of course, sales always wants the best selling package."

We think that several chapters could be written on the legitimate requirements as well as on the hunches and fetishes of each department in a big company. Packaging history is filled with costly bloomers that have come about through lack of coordination under some authoratative head.

It looks to us as if purchasing would be a logical place, providing purchasing has the human qualities to work with people who sometimes have conflicting interests.

How far will an advertiser go to complete an advertisement that hits his fancy?

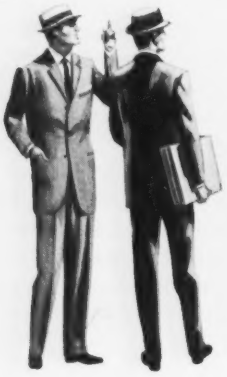
A few weeks ago Bourjois went overboard for a copy idea and a layout submitted by their agency. This was originally submitted for a black and white page, but Bourjois liked it so much they decided to use the advertisement in color.

This advertisement was for "Christmas in July" fragrance. In order to complete the advertisement in time for the closing date, the photographer and the art director flew to a Florida town near Tampa which has a stream that is supposed to be one of the clearest in the world. Also flown to this town were three Christmas trees, two blue spruces cut to order, and one artificial tree, in case of an accident.

Using diving masks, the photographer and art director swam around looking for suitable natural scenery where a Christmas tree would not look out of place.

Unfortunately, the Christmas tree, which was decorated out of water on the beach, lost most of its ornaments when put under water. Adding to the troubles, a rain storm blew up and destroyed the Christmas tree which drifted by on shore.

Before everything was ready, one of the worst storms in recent years hit Florida, most particularly the Tampa area, bringing in a lot of poisonous snakes and alligators. The final blow came a couple of weeks later when everything had again gotten on the beam—the tree was decorated, the model was ready, the camera poised, when suddenly the water became dense with thick mud. This came from building activity upstream. At any rate, the picture was finally made, so that when you see a Bourjois color advertisement "for Christmas in July" with an underwater decorated Christmas tree and a beautiful nymph swimming down to look at it, you will know its history.



Ucon brand propellants put action in products

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News in Packaging . . .

Polyethylene Labels

The F. G. Findley Company has developed a group of adhesives, Series 470 Adhesives, for labeling polyethylene bottles. Included are adhesives that handle both nontreated and treated polyethylene. Their speed of set, water resistance, and strength of adhesion are all said to be high.

Suntan Lotion Now Also Repells Insects

The Rexall Drug Company is introducing Suntan Lotion with Insect Repellant in a six-ounce polyethylene tube made by Bradley-Sun, Division of American Can Company.

The white tube is printed in green, orange, and tan. An external, over-all coating imparts a glass-like sheen to the whole package.

A point-of-purchase display, which holds a dozen tubes upright, is made of corrugated cardboard printed in the same colors as are the tubes. Display is by Menasha Container of California, Division of Menasha Wooden Ware Corp.

Kimble Glass Company's "ideal" sampling package, sent with the brochure, "A Report on Drug Sample Packages," to their customers, rating drug samples as to product protection, appearance, convenience, design.

Abbott Vitamin Bottle Wins Packaging Prize

Abbott Laboratories' hour-glass vitamin bottle designed by Raymond Loewy has been awarded a first prize in the annual competition sponsored by the National Packaging Association of Australia.

The bottle won first award in the glass section. Abbott also received an award of merit in the section for cartons.

Dow Names Expanded Plastic "Ethafoam"

One of the newest of the expanded plastics, polyethylene foam, has been named Ethafoam by its developer, The Dow Chemical Company.

The foam is closed-cell, and about 30 times lighter than water. Major new applications are now developing for the substance, which has been marketed since early in 1959 without a trade name. Package cushioning and thermal insulation are two areas that would interest the drug and cosmetic industry. The material displays high shock-absorbing ability, low water absorption and moisture transmission, and can be fabricated with conventional tools.

Its early uses were in marine buoyance applications—life jackets, surf boards, boat fenders, dock bumpers, and marine toys.

Coumadin tablets, anticoagulant by Endo Laboratories, are now pressed with potency—2, 5, 7½, 10, or 25 mg.—to prevent overdosage, as indicated on bright yellow cap in black. "Endo" is pressed on the other side of each.

New container for hydroscopic dry materials, which can be capped automatically, by Demuth Glass Works, Inc., in 1, 2, 3, and 4 dram sizes. A prime inner seal is combined with a supplemental outer seal and secure lock.

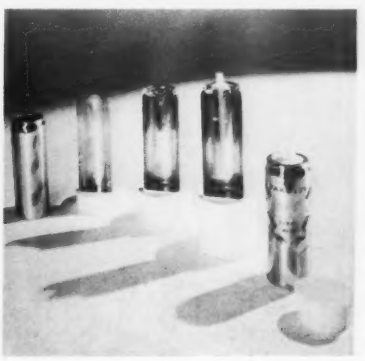
Metal Squeeze Tubes Up

Sales of fold-up metal tubes continue to rise. In the first quarter of 1960, shipments of 280,576,080 were 7 per cent over those in the first quarter of 1959. There was a sharp gain in tubes for medical and pharmaceutical preparations—66,631,392, or 15 per cent more than the first quarter of 1959.

Greenbrier, new men's line by Daggett & Ramsdell, Inc., includes cologne, after shave lotion, shampoo, pre-electric shave lotion, hair lotion, stick deodorant, in flint glass by Hazel-Atlas; labels, G. Neuman; caps, Danbury.

DuBarry Creme Paradox in white opal glass jar by Hazel-Atlas Glass for Lambert-Hudnut. Plastic cap, threaded to open and re-seal with a half turn, is by Mack Moulding Company; gold snap-in finial is by the Dollin Corporation.

Yardley's Flair spray cologne in a one-piece aluminum aerosol by Peerless Tube is formed (left to right): shoulder with neck curled in; cup-shaped top interlocks with mouth curl; valve is then sealed in with rubber gasket.



Richford's *Golden Touch* adds sales magic to your products

TWO TONE MASKED FINISH

Applied to our beautiful Futura Caps to give your product added sales appeal.

Available immediately from our unique "in stock" selections in standard styles from 10MM to 24MM. Also available with our own Exquisite, Ambassador, and Fantasy Bottles in sizes from 1 dram to 4 oz., in Standard open neck or Spillproof style.

GOLD PEAK DECOR

Applied to our black or white plastic closures to give your product more eye appeal!

Available immediately in 13MM to 24MM on any shape cap — including the ever-popular Futura design — from Richford's unique "in stock selections." In Standard and Spillproof styles, "Gold Peak" closures are the perfect companion for our complete line of Fantasy, Ambassador, Square, Exquisite and Round Bottles.

We Invite Your Inquiries for Samples and Prices

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Executive Offices and Plant
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Showrooms
Empire State Bldg., 350 5th Ave., N. Y., N. Y.

NEWS and VIEWS

BY TED KLEIN PUBLIC RELATIONS DIRECTOR*

Cancer Detection Aid

The nation's physicians will have a new tool to help them in the diagnosis of cancer as a result of a joint project of the American Cancer Society, New Jersey Division, Inc., and Eli Lilly and Company.

A 45-minute, black-and-white 16-mm. film, "The Cancer Detection Examination," has been produced that incorporates the most recent cancer diagnostic techniques available to general practitioners, and features Emerson Day, M.D., Director of the Strang Clinic, Memorial Center in New York, as the examining physician. Originally a closed-circuit TV program for New Jersey physicians, it was then transferred from video tape to film.

For distribution along with showings of the film is "The Cancer Detection Examination Manual of Simple Office Procedures," written by Dr. Day and other experts. It is a 35-page booklet, and includes 42 full-color photographs.

The film will be made available solely through Lilly representatives in this country and abroad, and will be shown only to physicians.

The project was originally conceived by the New Jersey Division of the American Cancer Society. Eli Lilly was approached by Ed. Rasp, radio and television director for Paul Klemtner & Company. (Mr. Rasp helped produce the nation-wide closed-circuit program for Lilly on the Salk vaccine in 1955, which introduced the vaccine to 55,000 physicians in the United States and Canada.) Dr. Donald C. Hines, medical director for Lilly, has been active as a liaison for his company.

According to several experts on cancer, if thousands of American physicians can see the film and have access to the Manual, the result will be far better recognition and care of early cancer. Early diagnosis is believed the most important factor in reducing the incidence of death from the disease, and the film is expected to narrow considerably the present gap between theory and practice in diagnosis.

*Paul Klemtner & Company, Inc.

Defends Television

The public relations man has been much beleagured by pundits on how he uses the tools of communication subtly to influence the masses. It has been the contention of some that television could be used by the PR man to enchant the voter in such a way that any political candidate with a big enough bankroll could so woo the public over TV that his election would be almost automatic.

Not so, says Sig Michelson, president of CBS News. Writing in the April 16th issue of *The Saturday Review*, he makes some cogent remarks on the effect of TV in the 1952 and 1956 campaigns and its probable effect on the 1960 campaign.

The last paragraph of his article brings up an interesting point:

"In an age of growing complexity, television has brought politics back to the face-to-face intimacy of early colonial days, when it was said that 'democracy could extend no farther than the sound of a man's voice.'" Nickelson concludes his article, "It has allowed our citizens to become better informed than ever before on the men and women seeking their votes. Inevitably this must make for better government and for better democracy."

We do not speak with Mr. Mickelson's eloquence, nor do we claim the same experience in TV; nonetheless, this weak voice agrees with him and also advises other public relations men to read the article.

Corporate Image

"By corporate image, then, we mean simply the mental pictures that people have in their heads about companies. These mental pictures may come from direct or indirect experience. They may be logical or illogical, depending on evidence or hearsay, and they appear in an infinite number of patterns." So said T. W. Benham, vice-president of the much respected Opinion Research Corporation of Princeton, N. J., in a recent talk. As experts in researching the image that a firm holds in the public's mind, they have come up with some basic answers to important questions on what the corporate image is, and why management seeks to control it.

For instance, according to Opinion Research Corporation's Dr. Claude Robinson and Walter Barlow, writing in *The Public Relations Journal* late last year, public relations people must continually ask themselves these questions:

"How well known are we? How do people learn about us? Where does our reputation differ from our competitors? Where are our reputation assets?"

Once answers to these questions are gathered, by an objective study of those in contact with the company, then some idea on what the image is can be formed. But why study this subject at all? That's my question. And why does management want to control its corporate image?

Mr. Benham says the reasons are very basic: "To build product acceptance, to attract and hold shareowners, to build employee loyalty, and to ward off political attack."

After the image study has been completed, it is up to management to decide what image is desired, select suitable themes to project it, and then make sure that they will build that image throughout their corporate world. It is also up to management to make sure that they are using every available means to project the image they want, so Benham says.

The Princeton group has studied the public's image of many large and small American companies. Their findings are fascinating, but far too complicated to go into here.

Several interesting observations have been made based on this exhaustive report, including the fact that there is no question that a favorable opinion of a company is far more likely to be held by people if they are familiar with the firm. And the more favorable the image, the more active people are in recommending the product of a firm to their friends. It was also established that the largest companies of an industry do not always have the best corporate image.

If you are interested in seeing the complete presentation on one of the most detailed studies I have ever seen, write or call Tom Benham at Opinion Research Corporation.

DRUG & COSMETIC CATALOG 1960-61 EDITION

The only comprehensive reference book published biennially exclusively for the Drug & Cosmetic Manufacturers over the past 29 years.

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It is invaluable in locating and selecting suppliers of basic materials for established or new products, and is the most complete and comprehensive summary published for this industry.

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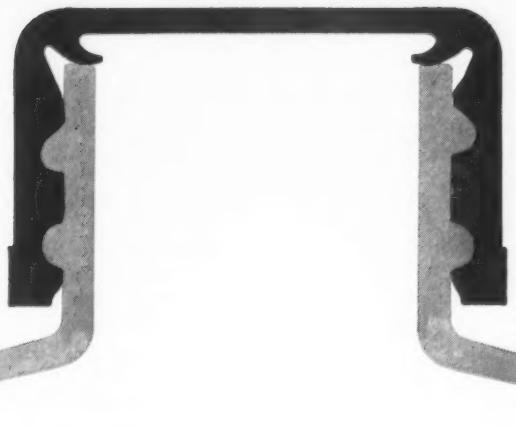


NEW ONE-PIECE CAP HAS A BUILT-IN SEAL!

With the new UN-A-TOP* one-piece plastic cap, **you need no liner.** The integral seal seats perfectly on threaded can or bottle spouts. It automatically locks itself! Versatile UN-A-TOPS screw on and off easily, and they won't jump or strip threads. They are strong, rigid, won't chip or dent, and they are priced in line with metal closures.

New UN-A-TOPS are molded from SUPER DYLAN® high-density polyethylene. This strong plastic has a smooth, glossy finish. It is durable, lightweight, rust-proof, and highly chemically inert. It has low permeability, and good heat and dimensional stability.

UN-A-TOPS come in all sizes, shapes, and colors. They put extra sales appeal on top of any cosmetic, detergent, food, chemical, or pharmaceutical package.

For more information about UN-A-TOPS and SUPER DYLAN write to Koppers Company, Inc., Plastics Division, Dept. DCI-7, Pittsburgh 19, Pennsylvania.

KOPPERS PLASTICS

*Pat. Pending

UN-A-TOPS are molded by the Dover Molded Products Co., 1000 East Avenue, Dover, Ohio.

Patent thoughts and trends

BY THOMAS CIFELLI, JR., PATENT ATTORNEY*

Patent Treasure Chest

There is a surprisingly little-known patent treasure chest available to all who care to use it. Many do use it, but comparatively few use it fully, even though to do so would save considerable sums of money.

This treasure chest is in no out-of-the way place. As a matter of fact, it is in the search room of the U. S. Patent Office in Washington, D. C. More specifically, it is the row on row of U. S. patents that have been granted over the years, all classified as to subject matter in convenient "shoeboxes."

At this point, the reader can be pardoned if he merely shrugs to himself and concludes that he has known of the search facilities of the Patent Office for many years and does not, therefore, understand why we should devote any attention at this late date to the matter.

The point is that the searching facilities of the Patent Office, while used by many, as already noted, are not understood sufficiently by those who can benefit from them. The average user of these searching facilities merely resorts to them in order to find whether something that he has done, such as the development of a new compound or composition or process, has already been described in any U. S. patents. In other words, the average user employs the search facilities as a final check before deciding whether to file a patent application. Since the cost of the usual so-called preliminary search is considerably less than the cost of filing a patent application, obviously a search prior to filing is in order, for considerable money can be saved by not filing a patent application doomed to failure.

However, it has never occurred to many that the search facilities could be used *before* undertaking expensive and time-consuming experimental programs. All that need be done is to obtain a list of all of the patents issued in a particular field of technical subject matter. Since the U. S. Patent Office classifies all of the issued patents in over 30,000 sub-classes and 300 main classes, and since an excellent index to this classification scheme is available, the only real job is to determine which sub-class or sub-classes are of interest. Copies of all of the patents in that particular sub-class or those particular sub-classes may then be ordered.

To give an idea of the classification scheme, the following listings, showing selected sub-classes in Class 167, Medicines, Poisons, and Cosmetics, and Class 260, Chemistry, Carbon Compounds, are set forth. The listing from Class 167 excludes poisons and the listing from Class 260 gives only those sub-classes dealing with hydroxy compounds.

Selected Sub-Classes from Class 167

50	Medicines
51	Radioactive
51.5	Sulfacompound containing
52	Anesthetic and Hypnotic
53	Veterinary
53.1	Fowl
53.2	Topical
54	Inhalants
55	Internal
56	Laxative
57	Effervescent
58	Topical
59	Eye
60	Dental
61	Corn
62	Liniments
63	Ointments
64	Suppositories
86	Medicinal Bath
70	Iodine
65	Organic
66	Oils and Fats
67	Alkaloids
68	Metallo Compounds
69	Arsenic
71	Mercury
72	Inorganic
73	Ferments
74	Animal Extracts
74.5	Urine
74.6	Liver or Kidney
75	Pancreas
76	Thyroid
77	Suprarenal
78	Antigens and Sera
79	Tuberculosis
80	Hog Cholera
81	Vitamins
82	Vehicles
83	Capsules
84	Medicated Papers and Fabrics
85	Cosmetics and Toilet Preparations
87	Hair
87.1	Waving
88	Dyes
89	Depilatories
90	Skin
91	Creams and Lotions
92	Powders
93	Dentifrices
94	Perfumes
95	X-Ray Contrast Compositions

Selected Sub-Classes from Class 260

617	Hydroxy
617.5	Hydrophenanthrene nucleus containing
618	Aromatic
619	Phenols
620	Diphenyl
621	Less than 12 nuclear carbons
622	Nitro
623	Halogen
624	C-Polycarbon alkyl or alkylene
625	Polyhydric phenols
626	C-isopropyl or isopropylene
627	Recovery from industrial wastes
628	From aryl sulfonates
629	By hydrolysis of aryl halides
631	Cyclohexanols (including menthols)
631.5	Terpene derived
632	Acyclic
632.5	With preservative
633	Halogen
634	From olefines
635	Polyhydric
636	By hydrolysis of alkyl polyhalides or halohydrins
637	Purification or recovery
638	From carbonyl-containing compounds

*Richards and Cifelli, Newark 2, New Jersey

639	By hydrolysis of alkyl esters of poly-basic inorganic acids
640	By hydrolysis of alkylhalides
641	By hydration of olefines
642	From alcohols
643	Purification or recovery

Since the key to the successful use of the searching facilities of the Patent Office is the correct selection of the pertinent sub-classes, it is believed that, at the outset, one should rely upon the advice of those skilled in the use of the facilities. This is so because the system of classification is based on the actual claims, rather than the disclosure. Thus, if a patent has a claim to a chemical compound, but the disclosure gives uses that are in the medicinal or perfume fields, the patent will not be classified in Class 167 but in the chemicals class, Class 260. As a matter of fact, however, the Patent Office also has an excellent cross-index, and it is entirely probable that in the case just given the patent would be cross-indexed to Class 167. For this reason, it is advisable to obtain a list of the current cross-index pertaining to any class or sub-class. The Patent Office will provide such a list at a very reasonable charge.

Inasmuch as patents are being granted every week, any listing is current for a short time only, and is soon outdated by the issuance of more patents in that particular class. This situation is easily taken care of, however, simply by subscribing to all patents that may be issued in specified sub-classes. The Patent Office will furnish newly issued patents within a day or so of their issuance. Thus, one can have an up-to-date state-of-the-art file on all U. S. patents in any selected fields.

To those who employ the Patent Office facilities to the full, current state-of-the-art files showing the historical development, the reasons for failure, the ways to overcome it, new trends in development and technical solutions—many of which are free to public use—are always at hand. Among those who so employ these facilities is the Detroit Harvester Company. A recent statement of its president, J. Thomas Smith, may be of interest in connection with the worth of this tool:

"The search files of the Patent Office constitute for us an invaluable source of technical information. In many instances, this information is to be found in print nowhere else . . . Whenever our research department embarks upon a new venture, the research engineers to whom the project is assigned . . . call upon our patent counsel to acquaint them with the background and current state of the patent art in the particular field in which they will be working. At the same time, this patent information helps our management people to make a more accurate appraisal of the market potentialities of the product in question, and to evaluate intelligently the likely sources of competition. In many cases we find that the data dredged up on our search of the patent files points the way to a solution of related engineering problems and when, as not infrequently happens, a patentee in order to emphasize the novelty of his achievement describes his previous failures or unproductive efforts, that too is helpful to us. It saves us many valuable hours of research time by preventing false starts and keeping our men out of avenues of investigation that have already proved to be blind alleys. Finally, an important by-product of this patent information is that it seems to stimulate increased creative thinking and invention on the part of our own engineers."

Restrictive Patent Ruling in Drug Case

A recent decision of the authoritative Court of Customs and Patent Appeals appears to be somewhat disquieting to applicants for protection on new drugs. Reference is made to the case of *In re Rosicky*, wherein the Court ruled that the utilization of a carrier in admixture with a compound does not make the resulting composition patentable, and, further, that although the claims required certain quantities of pharmaceutical agents to be in the carriers there was no showing by clinical data that such quantities would be safe or of any useful dosage for the treatment of any particular malady.

The patent applicant, in order to attempt to overcome the rejection to the effect that the recitation of a pharmaceutical carrier did not render claims patentable, relied primarily upon a number of prior art patents which did include claims to compounds in the environment of carriers of various types. The Court refused to consider this evidence as any authority. This is another instance of what almost every patent attorney must have told his clients any number of times: the mere fact that others may have obtained patents is no evidence at all that the action of the Patent Office in those cases was correct. Even the Patent Office itself will not give any weight to any argument based on the contention that others have obtained patents in like situations.

The Court, in refusing to allow the claims to the compositions which included the carriers, pointed out that it was well known that drugs and pharmaceuticals are usually dispensed and utilized in either liquid or solid media and that one skilled in the art would have known that the old compounds would have to be diluted or suspended in some manner to make them pharmaceutically useful. Consequently, the Court felt that it would be obvious to one skilled in the art to utilize a carrier with the old compound.

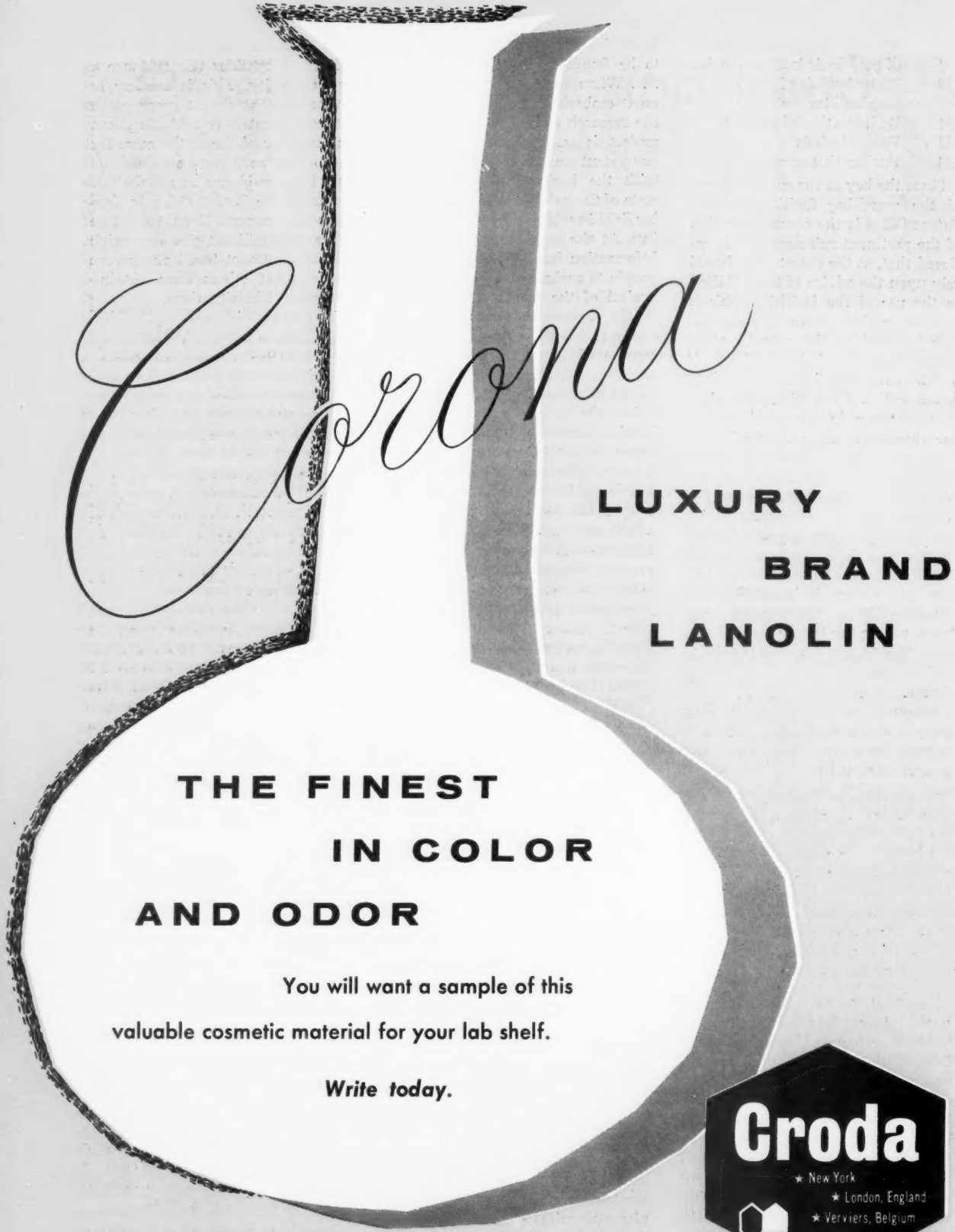
Obviously, this ruling, if accepted by the Federal Courts that may have to pass on patents involving issued claims of similar type, may well result in a holding that such claims are invalid.

"Shampoo Plus Egg" Held No Trademark

Another recent case illustrates that the way the other fellow does things is no justification as to validity. We refer to the expression "Shampoo Plus Egg," which apparently was exclusively used by Helene Curtis for "Hair Conditioning Shampoo" for more than five years, but was refused registration by the Patent Office Trademark Trial and Appeal Board because it was merely an apt descriptive name of the product. On the evidence submitted, the designation had not been shown to have acquired a secondary meaning identifying Helene Curtis's goods.

The Board reached this conclusion even though Helene Curtis was able to show that it had a consent judgment against one competitor and agreements against three other competitors, all in its favor. The competitors used such terms as "Flowing Creme Shampoo With Egg," "Shampoo With Egg," and Shampoo

(Continued on page 121)



CRODA, Inc. 15 East 26th Street • New York 10, N. Y. • MU 3-3089

Subsidiary: Hummel Lanolin Corp., 185 Foundry Street, Newark 5, N. J.

From left to right: Marvin F. Preiser, assistant vice-president in charge of production, Polak's Frutal Works, Inc.; Dr. Henry G. Gribou, who has been elected president of Dragoco, Inc.; Thomas LaPrelle, Sr.,

vice-president in charge of sales with Kolmar Laboratories, Inc.; and Lawrence V. Rhea, vice-president in charge of sales for the Imco Container Corporation, Division of the Rexall Drug & Chemical Company.

NEWS...

Appointments and Promotions

Marvin F. Preiser has been elected assistant vice-president in charge of production of **Polak's Frutal Works, Inc.** For 14 years Mr. Preiser has been with the flavor and production departments of the firm.

Dr. Henry G. Gribou, executive vice-president of **Dragoco, Inc.,** for the past four years, has been appointed president, by the board of directors.

Newly elected to the office of vice-president in charge of sales of **Kolmar Laboratories, Inc.,** is Thomas LaPrelle, Sr., who has been with Kolmar since 1945.

Imco Container Corporation, Division of Rexall Drug & Chemical Company, has appointed Lawrence V. Rhea as vice-president in charge of sales and Frederick L. Kocher as vice-president in charge of marketing. Mr. Rhea had been active in public and industrial relations, and Mr. Kocher has been in charge of Imco's Chicago office for four years.

Dr. Adolf W. Jann, vice-chairman of the board of F. Hoffmann-La Roche & Co., Ltd., Basle, Switzerland, and Irving Riker, chairman of the executive committee and general counsel of the Fidelity Union Trust Company, Newark, N. J., have been elected to the board of directors of **Hoffmann-La Roche Inc.** The company division, **Roche Laboratories,** has appointed Burns Geiger as associate in education, department of education. Formerly director of the pharmacy department of the Veterans Administration, Mr. Geiger has spent the past six years with Chas. Pfizer & Co., Inc.

George Lueders & Co., Incorporated, have announced three appointments: George F. Weber, secretary; Louis M. Allstadt, assistant secretary; and Joseph R. Dominica, a member of the board of directors.

William C. Stolk, president of the **American Can Company** since 1951 and chief executive officer since 1952, has been elected chairman and chief executive officer of the company, and Roy J. Sund has been elected president. Mr. Sund has been a director, vice-president in the corporate executive department, and general manager of the Marathon Division. He and William F. May, corporate vice-president and general manager of the **Canco Division,** were elected members of the executive committee of the board of directors. Donald A. Snyder, formerly assistant general manager of Marathon, succeeds Mr. Sund as general manager of that division. He was also elected a vice-president in the corporate executive department.

Frank Schottelkorb, formerly of the sales department of **Pitman-Moore Company, Division of Allied Laboratories, Inc.,** and for two and one-half years sales manager and vice-president of **Pitman-Moore Company of Canada Limited,** has been named president and elected to the board of the Canadian company, also an Allied division. Mr. Schottelkorb, replacing Ralph Thompson, who has resigned, also continues as sales manager.

Raymond C. Pogge, M.D., has been appointed medical director of **Smith-Dorsey, Division of The Wander Company.** He was formerly director of medical research at the William S. Merrell Company.

New technical service manager in the medicinal products department of the **Merck Chemical Division** is Hoyland A. Wands, technical service assistant since 1956.

Dr. Eduardo Maldonado has been named director of the international clinical investigation department for **Schering Corporation.** With Schering since 1948, he became international clinical research senior physician in 1955.

Three scientists have been appointed to newly created positions at the Groton, Conn., research laboratories of **Chas. Pfizer & Co., Inc.** Alexander Scriabine, M.D., has been named supervisor of general pharmacology; Dr. William H. Funderburk, supervisor of neuro-pharmacology; and Dr. Kenneth F. Finger, supervisor of clinical pharmacology, all in the macrobiology department. Dr. Scriabine returned to Pfizer last year as senior pharmacologist, after receiving his M.D. from the University of Mainz, Germany. From 1954 to 1956 he had been a research pharmacologist. Dr. Funderburk, formerly senior neuro-pharmacologist, joined the firm in 1959 following two years as a pharmacologist elsewhere. He was a clinical electroencephalographer at State Hospital, Traverse City, Mich., for ten years. Dr. Finger began with Pfizer as a pharmaceutical chemist in 1955.

Jack T. Heptig has become clinical research associate for **Ayerst Laboratories,** with headquarters in Los Angeles. He has been a member of Ayerst's staff since 1950.

Arthur C. Greber has joined **Vick Chemical Company** as chief of manufacturing service. Mr. Greber had been vice-president of manufacturing for Clopay Corporation.

From left to right: Dr. Louis Magid, head of pharmaceutical and other applications of the bulk chemicals market, Fine Chemical Division, Hoffmann-La Roche, Inc.; John J. Vance, director of pharmaceutical research, Roche Laboratories; Edmund Mendell, production manager, pharmaceutical laboratories division, Schieffelin & Co.; and Isadore Farber, pharmacologist, Scientific Laboratories Section, also at Scheiffelin & Co.

Hoffmann-La Roche Inc., has divided the work of its pharmaceutical laboratory research into two areas, with Dr. Louis Magid in charge of research concerning bulk chemicals in the **Fine Chemicals Division,** and John J. Vance, director of pharmaceutical research concerning ethical prescription items at **Roche Laboratories.** Dr. Magid, who joined Roche in 1950, has been head of pharmaceutical research for the past ten years. Mr. Vance has been with Lederle Laboratories for the past 17 years, most recently as manager of special products development. Ted D. Preston, formerly assistant vice-president for sales and advertising, Reed & Carnrick, is now product manager for Roche Laboratories.

Edmund Mendell has been appointed production manager of the pharmaceutical laboratories division of **Schieffelin & Company.** He was formerly plant superintendent. Isadore Farber, formerly dispensing supervisor at Mt. Sinai Hospital pharmacy, has been named pharmacologist of the scientific laboratories section.

Dr. Allan H. Conney has been appointed head of a new section of biochemical pharmacology in the **Pharmacodynamics Division of The Wellcome Research Laboratories.** He had been pharmacologist of the permanent staff with the Laboratory of Chemical Pharmacology of the National Heart Institute, National Institutes of Health in Bethesda. Dr. John J. Burns has been appointed associate research director, in charge of the Pharmacodynamics Division, effective September of this year. He succeeds the late Dr. Edwin J. de Beer. Dr. Burns has served with the Laboratory of Chemical Pharmacology, National Heart Institute in Bethesda since 1954, most recently as Deputy Chief of the Laboratory, and since 1952 he has also held the position of Assistant Professor on the Research Service of New York University. He is an editor of the *Journal of Pharmacology and Experimental Therapeutics* and a member of the Pharmacology and Experimental Therapeutics Study Section of the NIH. He is also a consultant to the Graduate Council of George Washington University, to the U. S. Army Chemical Corps, and to the Hospital Cooperative Drug Evaluation Group, Public Health Service.

White Laboratories has appointed John J. Miskel vice-president in charge of the **Scientific Division.** Long associated with the pharmaceutical industry, Mr. Miskel has previously served with Allied Chemical Company, Nopoco Chemical Company, and Chas. Pfizer & Co.

Wilbur R. Jones has been appointed by the **S. E. Massengill Company** to the newly created staff position of new products coordinator, reporting directly to President Frank E. DeFriece, Jr. His duties include chairmanship of the new products screening committee.

Mallinckrodt Chemical Works has announced three appointments: Dr. Charles D. Harrington, manager of the Uranium Division, has been named vice-president of **Mallinckrodt Nuclear Corporation,** a wholly owned subsidiary. He will also exercise general supervision of **Uranium Division** activities. Frank Zeitlin, who joined Mallinckrodt Nuclear a year ago in a general management capacity, is now general manager of that subsidiary. And Stanley H. Anonsen, formerly assistant manager, Uranium Division, is now manager of that division.

From left to right: Dr. Allan H. Conney, head, biochemical pharmacology, and Dr. John J. Burns, associate research director in charge of the Pharmacodynamics Division, The Wellcome Research Laboratories; John J. Miskel, vice-president, Scientific Divison, White Laboratories; Wilbur R. Jones, new products coordinator, S. E. Massengill Company; Dr. Charles D. Harrington, vice-president, Mallinckrodt Nuclear Corporation.

From left to right: Sam T. Parker, Jr., general sales manager, Baxter Laboratories, Inc.; Edward C. Page, Jr., assistant to the director of manufacturing, J. T. Baker Chemical Company; Frederick C. Visor, product manager, Pharmaceutical Division, Shulton, Inc.; and Carl Porcing, assistant to the director of medical research, J. M. Amberson, M.D., for the international division of the Norwich Pharmacal Company.

Sam T. Parker, Jr., who has been with **Baxter Laboratories, Inc.**, for 11 years, has been appointed general sales manager for the company.

The J. T. Baker Chemical Company has appointed Edward C. Page, Jr., assistant to the director of manufacturing. Mr. Page had been first vice-president of the Henry Bower Chemical Manufacturing Company.

Frederick C. Visor, formerly advertising and sales promotion manager of veterinary products for the Agricultural and Laboratories Divisions of Chas. Pfizer & Co., Inc., has been appointed product manager of the **Pharmaceutical Division of Shulton, Inc.**

Arthur S. Deter, M.D., senior editor in the scientific information division since 1958, has joined the professional services section, the medical division, **Norwich Pharmacal Company,** where he will oversee production of medical films and scientific exhibits for the **Eaton Laboratories Division,** and handle correspondence with physicians. Carl Porcing, professional assistant in the veterinary medical division, has been appointed assistant to J. M. Amberson, M.D., director of medical research for the international division. He was with Merck & Company for 19 years before joining Norwich in 1956. In the organic chemistry section, Homer A. Burch, Ph.D., has been named senior research chemist, and Dr. Clarence W. Truehart, formerly executive secretary of the American Medical Technologists Association and editor of its journal, has joined the scientific information division of Norwich, succeeding Dr. Deter. Finally, Bernard J. Schulte has been appointed patent attorney. He formerly held a similar position with Esso Research and Engineering Company.

The S.S.S. Company has appointed Mel Robinson, sales promotion manager for S.S.S. Tonic for four years, as sales manager.

Raymond J. Powers, divisional sales manager in Atlanta, has become product sales manager in the sales promotion division of the home office of **E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corporation.** Harry F. Bauman has become assistant director of professional advertising for the division, succeeding J. Norman Silsby, who has been named manager of the professional service department. Dr. Ruth Havemeyer and Dr. Arge Drubulis have been appointed senior research scientists in the pharmaceutical research section of the **Squibb Institute for Medical Research.**

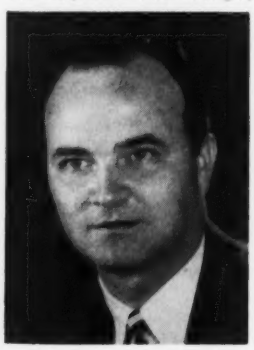
New director of proprietary research for **Carter Products, Inc.,** is Dr. Irving Reich, formerly chief of the physics and physical chemistry section of Lever Brothers Research Center.

Herbert M. Greenspon, newly appointed vice-president of operations, **Revlon, Inc.,** had been executive vice-president of Columbia Records Division, Columbia Broadcasting System, Inc.

Dr. William C. Luther has joined the medical department staff of **Ames Company, Inc.** Dr. Luther has practiced medicine in Maine since 1953, serving on the staff of the Bar Harbor Hospital and as Town Health Officer in Sullivan.

George M. Fornero, formerly regional sales manager for Continental Filling Corporation, has joined **Patricia Stevens Cosmetics, Inc.,** as general manager sales.

Left to right: Mel Robinson, sales manager, The S.S.S. Company; R. J. Powers, product sales manager, sales promotion division, E. R. Squibb & Sons; Dr. Irving Reich, director of proprietary research, Carter Products, Inc.; Herbert M. Greenspon, vice-president, operations, Revlon, Inc.



Givaudan originates

exciting new fragrances for your

Creams and Lotions!

Today's trend in creams and lotions indicates a preference for the sophisticated, stylized scents—a trend turning from the conventional to the modern types. And, to insure a first impression of quality and a lasting impression of excellence, your cosmetic requires a fragrance skillfully blended and meticulously chosen.

Givaudan's knowledge and experience can simplify the problem for you. Our creative laboratories custom-create the perfect balance in fragrances . . . scents that fulfill the public demand.

In any perfuming problems—with proper consideration of all factors—Givaudan can originate the unique, exciting fragrance you have been searching for.

GIVAUDAN-DELAWANNA, INC.
321 West 44th Street, New York 36, N. Y.

GIVAUDAN

Donnell H. Wagner has joined **Baxter Laboratories, Inc.,** as chief engineer. He had been an assistant vice-president of Campana Corporation.

Otto R. Reiner has joined **Sterling Drug Inc.** as vice-president in charge of sales of its **Glenbrook Laboratories Division.**

Benjamin A. Smith, head of retailer services department of **Eli Lilly and Company,** has become staff assistant in merchandising administration.

Charles C. Rabe has been appointed government sales manager of **J. B. Roerig and Company, division of Chas. Pfizer & Co., Inc.,** along with his positions as new product and professional relations manager, director of wholesaler trade relations.

Arthur B. Wintringham has been named administrative director of the **Chemical Division of Rexall Drug and Chemical Company.** He had been with the Ethyl Corporation.

Harold W. LeBoeuf has been named manager of manufacturing of **General Electric's** silicone products department, succeeding Dr. James R. Donnalley, who has joined the firm's insulating materials department.

Robert L. Jenal, formerly executive assistant to the vice-president of manufacturing, has become plant manager for the **St. Paul Manufacturing Division of The Toni Company, Division of The Gillette Company.**

J. Emmitt Terrell, sales executive for **Mead Johnson,** has been promoted to the position of sales manager in charge of field sales operations of the firm's **Nutritional and Pharmaceutical Division.**

Robert E. Ritter, with **Ultra Chemical Works, Inc.,** since 1955, has been appointed product sales manager of the **Industrial Chemicals Division,** and Paul J. Ketrick has been promoted from product sales manager in that division to district sales manager. Ultra is a wholly owned subsidiary of **Witco Chemical Company, Inc.**

George G. Shackleford, Jr., has joined **Lanolin Plus, Inc.,** as wholesale drug sales manager and product manager for Rybutol. He had been assistant to the vice-president in charge of sales with Clairol, Inc.

Chesebrough-Pond's Inc. has promoted Richard C. Courtney from regional sales manager to manager of food store sales.

Thomas F. Cass, formerly in charge of boxboard mills and carton plants on the West Coast and in Texas, has been given responsibility for all of the folding carton operations and for the **Sefton Fibre Can Division of the Container Corporation of America,** of which he is a vice-president. Harry E. Miles, now vice-president in charge of all corrugated operations, had been responsible for coordination of national sales in the corrugated shipping container division. Frederick S. Crysler is now vice-president responsible for the company's paperboard mills, and for the **Pioneer Stock Company,** a subsidiary. He had been in charge of the firm's Brewton, Alabama, mill and of all boxboard mills east of the Rocky Mountains.

Samuel Kalish, formerly head of the Sakana Corporation, his own firm of visual merchandising specialties, for seven years, has joined **Yardley of London, Inc.,** as design administrator, a newly created position.

Miles Consolidates Marketing

A major consolidation of all phases of marketing and sales of Miles Chemical Company has been effected.

W. J. Ferracone, formerly sales manager for Takamine Laboratory, has been named general sales manager of Miles Chemical Company. The present sales forces of Sumner Products and Takamine will combine as the basic sales force handling all Miles products, including citric acid, enzymes, dialdehyde starch, and fine organic chemicals.

Eleven distributors with more than 70 warehouses throughout the nation will also handle the sale and distribution of citric acid. The entire sales force reports to Mr. Ferracone.

Under the new plan, L. D. Williams, formerly sales manager of Sumner Products, becomes special projects sales manager.

W. E. Irwin, sales representative for Sumner in Detroit, is now market research supervisor, and will be located in Elkhart shortly. J. M. Fergusson, New York office administrative assistant to the sales manager of Sumner, becomes eastern regional sales manager with offices in Clifton.

H. D. Armitage Retires

Harry D. Armitage, manager of the New York office of Emery Industries, Inc., has retired after 35 years in the New York area. In May, he received the Distinguished Salesmen's Award of the Cincinnati Sales Executives Council, and his fellow workers in Cincinnati held a banquet in his honor, at which he received a silver cigarette box.

HARRY D. ARMITAGE

Mr. Armitage joined Emery in 1925. When the sales force was divided in 1953, Mr. Armitage remained with the fatty acid sales department.

Society for Economic Botany Elects Guenther President

The recently established Society for Economic Botany, which held its first annual meeting in May at the Purdue Memorial Hall, Purdue University, in Indiana, heard a presidential address by Dr. Ernest Guenther, its newly elected president, along with more than 20 papers by experts in botany and related fields. About 70 of the more than 200 members were present.

Winifred Sewell Elected

Winifred Sewell, senior librarian at the Squibb Institute for Medical Research was installed as the 1960-1961 president of Special Libraries Association, during the annual business meeting at the Sheraton-Cleveland Hotel, Cleveland, Ohio.

Miss Sewell has been with Squibb since 1946. Since 1948 she has edited Unlisted Drugs, a monthly publication of the Pharmaceutical Section of SLA's Science-Technology Division, and has served as SLA representative on the Joint Committee on Pharmacy College Libraries of the American Association of Colleges of Pharmacy.

Fred N. Dundas Re-elected by GCMI

Fred N. Dundas was re-elected president of the Glass Container Manufacturers Institute at a recent meeting of the board, in White Sulphur Springs. Mr. Dundas is president of the Dominion Glass Company Limited, one of the 61 companies who are members of the Institute.

FRED N. DUNDAS

C. G. Bensinger of Owens-Illinois Glass Company was elected first vice-president, and J. G. Ferguson, Laurens Glass Works, Inc., second vice-president.

Voorhees and Budd Abroad

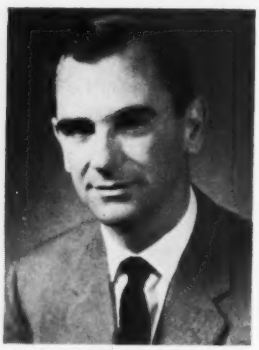
Kenneth V. Voorhees, president, Ivan H. Budd, vice-president, and K. G. V. Voorhees all of Ungerer & Company, recently attended the opening of the new Ungerer factory at 14-18 Weedington Road, London, England.

The three were later joined in Paris by Henry Budd, and the four then visited the Grasse country in France, during the harvest season. From there they went to Spain to view the orange groves.

Givaudan Constructing in Spain

Givaudan's international organization has begun construction of a plant for Givaudan Iberica S.A. in Spain. Located in San Celoni, about 35 miles from Barcelona, it is expected to be ready for production in about one year. Its purpose is to assure a continuous supply of basic perfume materials to the expanding soap, perfume, and cosmetics industry in Spain.

Executive vice-president and managing director is Salvador Sanz de Acedo, a grandson of Xavier Givaudan, who is chairman of the board. Other officers include Jose Valls Taberner, president, who is also president of Cros S.A., chemical company



SALVADOR SANZ DE ACEDO

in Spain, and Andre Givaudan, vice-president. J. Ravetllat, a sales representative with Givaudan for 30 years, is sales manager of the new company.

Mr. Sanz has been visiting the Givaudan organization here, and plans to visit the Givaudan factory in Brazil before returning to Spain. His purpose is effective coordination with the new unit in Spain.

Philadelphia College of Pharmacy and Science Alumni President William C. Crescenta (left), College President Ivor Griffith, and Awards Chairman E. H. MacLaughlin greet Dr. J. W. E. Harrison (right), Director Emeritus of the La-Wall Memorial Laboratory and Professor Emeritus of the College, as he receives the Annual Alumni Award at the spring reunion.

J. William Everson Elected President of C.M.R.A.

J. William Everson, assistant manager of market research for The Dow Chemical Company, has been elected president of the Chemical Market Research Association for the ensuing year.

Other officers are F. Scott Godron, Victor Chemical Works, president-elect; Ray Harrison, Jr., Tidewater Oil Company, treasurer; and Kevin Bradley, White, Weld Company, secretary.

Warner-Chilcott Man Chosen by Medical Exhibitors

George J. Rohrmann, manager of the audio-visual services of Warner-Chilcott Laboratories, has been elected chairman of the pharmaceutical committee of the Medical Exhibitors Association.

The Association is a national organization of 250 companies.

Dr. Thomas A. Dooley (right), co-founder of MEDICO, the guest speaker at the Ladies' Day Luncheon of the CIBS. At the left, Lamson Scovill, CIBS president, and, in the center, Mrs. G. Sassano, Dr. Dooley's assistant.

Robert A. Horsey, vice-president, Givaudan-Delawanna and president of the Essential Oil Association, (left) presenting the "President's Cup" to Jim Reardon, Roubechez, Inc., winner of the EOA golf tournament held in June.

Elmer H. Bobst (left), chairman of the board of Warner-Lambert Pharmaceutical Co., accepts the award for health contributions from Dr. Victor R. Alfaro, president of the Medical Society of the District of Columbia.

Changes at Mennen

Five distinct product lines have been established by the Mennen Company: Mennen's Men's Line, Baby Magic Products, Date-Line Products, Family Products, and Proprietaries. In addition, a new line of men's toiletries, Citation, is soon to be introduced regionally.

Jack Leonard, sales promotion manager, becomes junior product manager for the Men's Line. Jerry Boehling, formerly with Warner-Lambert, has joined Mennen as sales promotion manager. Charles Dentinger, advertising manager and formerly in the marketing services department, will now also report to the merchandising manager.

Sylvester Cleary, who has had charge of marketing services, has been promoted to marketing coordinator and will act as staff assistant to the director of marketing. Jack Gould, manager of market research, and Thomas Brady, product development manager, will report directly to the director of marketing.

James Farrell, who has been responsible for materials specifications, has been appointed packaging coordinator. Robert Foth, administrative sales manager, is now nondrug trade sales manager. Robert Teuscher has joined Mennen as administrative sales manager. He had been with Pharmaco, Inc.

G. W. Bengert Receives Degree

George W. Bengert, president of the Norwich Pharmacal Company received the honorary degree of Doctor of Science at Hartwick College in Oneonta, New York, during the recent Commencement exercises.

At the British Aromatic Compound Manufacturers' Association luncheon meeting in London, left to right, R. D. F. Marlow, secretary; Dr. Ernest Guenther, vice-president, Fritzsche Brothers; J. A. Clark, chairman; and Edward E. Langeneau, vice-president, Fritzsche Brothers.

South Africa Manufacturer and Distributor Available

For the past 23 years, Wrens (Pty.) Ltd. has held the exclusive manufacturing and distributing franchise for Revlon throughout the Union of South Africa, South West Africa, and the Protectorates. The firm, which is equipped to handle all aspects of the cosmetic industry from manufacturing through final sale and distribution, has relinquished the Revlon account, and is now interested in similar work with other cosmetic houses.

New Private Formula Manufacturing Facilities

Leo Linden has established Leo Linden Laboratories, Inc., at 8454 Steller Drive, Culver City, California, a private formula manufacturer of tablets, capsules, and liquids.

Mr. Linden, who is general manager and president of the new firm, has had more than 22 years of experience in this field.

Guenther Honored in England

The British Aromatic Compound Manufacturers' Association recently honored Dr. Ernest Guenther, vice-president and technical director of Fritzsche Brothers, Inc., at an official luncheon at the Livery Hall of the Guildhall, London. Presiding was J. A. Clark, chairman of the association, and among the guests were Dr. Derek H. R. Barton, Professor of organic chemistry at the Imperial College of Science and Technology, London; A. R. Penfold, formerly director of the Museum of Applied Arts and Sciences, Sydney, Australia; and Mr. Edward Langenau, vice-president of Fritzsche Brothers, Inc., of New York.

Writing Bureau for the Industry Opens in Stamford

The Heldt Writing Bureau, a new service for the preparation and editing of pharmaceutical literature for industry, has been opened at 171 Stamford Avenue, Stamford, Conn., by Marion Fear Heldt.

The bureau is designed as a "copy studio" to prepare brochures, package inserts, manuals, advertising ideas and copy, and to edit manuscripts on clinical findings.

Mrs. Heldt, whose training is in chemistry and bacteriology, has had experience as an editor, newspaper reporter, and copywriter, the latter at L. W. Frohlich & Company and Erwin Wasey, Ruthrauff & Ryan.

Memphis D.&C. Club Celebrates Fifth Year

The Memphis Drug and Chemical Club met in May to celebrate its anniversary. It was organized five years ago by Edgar Mann, now sales representative for Nysco Laboratories, who served as its first president.

Members of the Drug and Pharmaceutical Committee of Packaging Institute, Inc., attending a packaging seminar in Neenah, Wis. (left to right): front row, M. E. Duellman, Massengill; H. M. Berger, SK&F; Paul Schulz, Ciba; R. Heine and C. B. Burnside, Lilly; R. J. Hennessy, Lederle; second row, A. R. Schettel, Squibb; J. L. Eagan, Rexall; J. M. Kolbas, Bristol Laboratories; H. A. Walker, Mead Johnson; L. Hewlett, Wyeth; back row, C. Spannello, Schering; G. Wherry, Abbott Laboratories; O. P. Norris, Winthrop Laboratories; E. C. Burch, Kimberly-Clark; A. J. Barth, Carter Products; Hugh Horner, Chas. S. Pfizer & Co.; and L. D. Merritt, Kimberly-Clark.

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New manufacturing and research plant of Merck Sharp & Dohme Limited, Hertfordshire, England.

Risdon Adds Plastics Division

After 50 years as a metal fabricator in the small components, aerosol, cosmetic containers, notions, and wire novelties field, the Risdon Manufacturing Company has added a full-fledged Plastics Division to its operation in Naugatuck, Conn. Although it was established to fill the company's own plastic needs, the Division will also produce for other companies.

Strong Cobb Arner Doubles New Jersey Plant Facilities

An expansion of the Strong Cobb Arner Inc. Murray Hill, N. J., plant that will double its manufacturing and laboratory facilities in the East is expected to be completed this Summer. It will be the firm's fourth highly diversified unit for manufacturing and packaging a wide range of liquid and dry drug products.

Fleuroma Develops New Research Program

Fleuroma, Inc., has announced an accelerated research program for the development of original aromatic synthetics. The application of the latest physico-chemical methods for the manufacture of natural isolates will also be intensified under the new program.

The increased space and plant facilities available at the company's new quarters in Long Island City have made possible this expanded program.

Penick Division Moves

To facilitate further expansion, the Farm Chemical and Insecticide Division of S. B. Penick & Company has been established at 4161 Beck Avenue, St. Louis 16, Mo. Products sold by the division will be stocked in St. Louis.

Sterling Drug Plant Opened in Australia

A $2,500,000 pharmaceutical manufacturing plant and laboratory constructed by Sterling Pharmaceuticals Pty. Limited, a subsidiary of Sterling Drug Inc., was recently dedicated in Sydney Australia. This new plant marks the fifth expansion of manufacturing facilities by the Australian firm since its founding early in the century.

Allied Expands General Chemical Facilities

The faciilties of the laboratory of the General Chemical Division of Allied Chemical, near Morristown, New Jersey, are to be more than doubled. Construction, which has already begun, is expected to be completed late in 1961. With the additional space, almost 500 research scientists and supporting staffs will eventually be accommodated at the Columbia Road-Morris Township site.

Embassy Laboratories Moves to New Quarters

Embassy Laboratories, Inc., private label cosmetic manufacturer, has moved to new and larger quarters at 52-10 37th Street, Long Island City, N. Y. The New plant triples its former space. A fully equipped machine shop has been installed.

Colton Moves Eastern Branch Office

The Eastern branch office and showroom of Arthur Colton Company has been moved to new and expanded quarters at 566 Grand Avenue, Englewood, New Jersey. The new office is south of Route 4 and two miles north on Route 46—only five minutes from the George Washington Bridge.

Kodak's DPI Moves

The New York district office of Distillation Products Industries, division of Eastman Kodak Company, has moved from New York City to 190 East Post Road, White Plains, New York; telephone, White Plains 9-8232.

Rudolph F. Berls

Rudolph F. Berls, who served the Premo Pharmaceutical Labs., Inc., for some time in the sales branch, died in July.

Walton M. Wheeler, Jr.

Walton M. Wheeler, Jr., vice-president, secretary, and general counsel of Eli Lilly and Company, died July 4 while visiting friends at Walloon Lake, Mich. He was 52.

Mr. Wheeler had been associated with the company for 24 years. He was elected secretary in 1954, a vice-president in 1954, and had been a director since 1949.

Harold C. Deakin

Harold C. Deakin, former vice-president of Allied Laboratories, Inc., and western zone manager for Pitman-Moore Company, died June 18 in DeLand, Florida. He was 67.

Mr. Deakin had retired in 1958 after more than 20 years with the company, which he joined in 1938 as manager of the west coast branch operations. He was made zone manager and a director in 1950.

Arthur H. Downey

Arthur H. Downey, vice-president in charge of research and technology of Magnus, Mabee & Reynard, Inc., died June 13 at Methodist Hospital in Brooklyn, New York. He was 62 years old.

Mr. Downey had joined the company in 1921 as an analytical chemist, and was, successively, chief analytical chemist, production superintendent, and director of all MM&R scientific activities.

Russell D. Twomey

Russell D. Twomey, Los Angeles sales representative of Mallinckrodt Chemical Works, died on June 11, as a result of injuries received in an accident a few days previously. He was 56 years old.

Mr. Twomey, a registered pharmacist, had been associated with the Mallinckrodt sales department in southern California since 1938.

By Far . . . the largest number of Perfume and Fragrance advertisers ever to use one magazine are now telling their story in BEAUTY FASHION. Read BEAUTY FASHION each issue for the fascinating story these perfume advertisements tell.

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BEAUTY FASHION THE MAGAZINE OF PERSONAL SELLING

101 West 31st Street, New York 1, N.Y.

Management Forum

BY FRANCIS CHILSON
INDUSTRIAL CONSULTANT

Caribbean Cruise

To those of you who long for the leisurely delights of a luxurious Caribbean cruise, as depicted in the Sunday newspapers and in lushly illustrated travel brochures, let me, as a twice-burned traveler, offer a bit of contrary advice. This advice derives from a recent and costly experience on the S.S. Mauretania on which Mommie and I took a three weeks cruise. The distaff side insisted on doing all the shore tours too. Never! Never again! I never want to see another coconut palm or banana palm. I never want to see another native. I never want to see sugar cane, cacti, coffee trees, post offices, government buildings, radio stations, decrepit churches, muddy tropic rivers, or oil storage tanks. And I don't want to smell them either! So when the cruise urge poisons your wife and she begins to needle you in the customary manner of wives from Eve onward, do this:

Hire a nice suite in a first class New York hotel (or San Francisco, New Orleans, or even Oshkosh). The rooms will be better furnished, cleaner, and more comfortable than those on any ship and there will be no smell of mildew. Then, hire a professional from one of the travelogue outfits to come to your room every afternoon and show a colored motion picture of the places to which you are supposed to be cruising.

Invite to these showings as fellow passengers a decrepit bunch of old maids, retired school teachers, and some wealthy old harridans. Include some withered old bachelors, widowers, and a few rich, dessicated old fools. Be sure to include one who spouts inanities continually and regards himself as the Soul of Wit, and still another who regards himself as the Life of the Party. In the intervals of the travelogue, a few cocktails are in order. You, of course, must have a professional cruise director to organize the entertainment. This will consist of musical chairs, post office, bingo, charades (simple ones), bridge, and a guessing contest. So much for the first day of the cruise. By this time you will have imbibed the exciting atmosphere and will be looking forward to the first port-of-call.

Next day you will arrange with the cruise director a motor trip to the local slums to have a look at the natives. On the way back, you will stop at the Botanical Gardens in the Bronx to see coconut palms etc., and there will still be time for the inevitable shopping. A stop will be arranged at Macy's or the equivalent to pick up straw baskets, conch shells, native jewelry, and other junk with which tourists encumber themselves as gifts for friends and relatives, and which soon finds its way into the attics and garbage cans of the unimpressed and unappreciative recipients.

The following day after a *good* lunch (which you will not get on any ship excepting possibly those of the French and Italian lines) and having witnessed in the comfort of your suite a showing of the next island you are about to visit, your cruise director will organize a tour to Brooklyn to see and smell the Gowanis Canal to give you an idea what a tropic river looks like and what an open sewer smells like. After that you will cross the Hudson to Staten Island, a short sea trip, which will be very exciting, and then go across the Island to Bayonne, New Jersey. Here you can look at and smell oil and gasoline storage tanks to your heart's content. It will make you yearn for some unlovely Caribbean island. On all these tours you must of course have with you in your car either the Soul of Wit or the Life of the Party. On regular cruises you get stuck with one or the other. On the way back from Bayonne you will do some more shopping and buy a fist full of "Wish You Were Here" cards.

The next day you will, after the usual preliminaries, visit the post office, the TV stations, the radio stations. You might even visit the railroad stations, but that would be cheating as there are no railroad stations in the Islands. Now, to get the full benefit of your cruise, you must repeat, day after day, until

How to pick a Colloid Mill

Picking the proper colloid mill—for the best possible results in grinding, emulsifying and homogenizing—isn't always easy. For most colloid mills are "look-alikes"—on the *outside.*

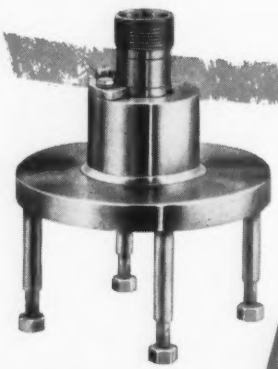
But if you stripped a *G-W Eppenbach Colloid Mill* down, you'd see fundamental differences—like the calibrated micrometer adjustment that assures accurate clearances between rotor and stator (which can be reproduced *exactly* at any time) . . . the by-pass assembly that recirculates material until ready for discharge . . . the *tangential* discharge outlet that allows material to flow out rapidly at a natural angle, for maximum production . . . the safety stop studs for protection of the rotor-stator at small gap settings . . . the component design of rotor-stator . . . and many other quality features.

In addition, any laboratory, pilot plant, or production model with the standard, open, gravity fed hopper can easily be transferred into a unit suitable for continuous flow operations by interchanging the hopper with the pressure head assembly shown at right.

All these features make the easy-to-use, easy-to-clean, easy-to-install Eppenbach Colloid Mill an exceptional long-term investment in service, economy and efficiency. Write for our new 24-page catalog.

QV-6-1 Laboratory Model has ½ HP universal motor with 5 gal. stainless steel jacketed hopper or pressure head for direct feed.

VT-11 Production Model has 15 or 20 HP motor with 20 gal. stainless steel jacketed hopper.



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you are about ready to go nuts, the routine I have outlined here for you. Fortunately, ships have bars. So do hotels. Mind you now! No cheating! No varying the routine by slipping out to a good show, night club, opera, or concert. No gorging yourself at an expensive restaurant as a relief from routine hotel food. It simply isn't done in the middle of the Atlantic on a "luxury" cruise. And, after a long tiresome day, you can while away the long, tiresome nights with your cruise friends playing bingo or musical chairs!

Note: The last cruise I took was in 1936. It was a mid-summer cruise out of New York on the Roma—later sunk in the war. I didn't realize beforehand what I was getting into. When it was too late for Mommie to change my mind about going, I found that of the 700 passengers aboard about six hundred were attractive females under 35, mostly secretaries, nurses, and teachers. Talk about bringing coals to Newcastle! I was promptly put under 24-hour, minute-by-minute, surveillance. The prisoner of Chillon was as free as air compared with me! When Mommie slept, she did so with one eye closed and the other —open—on me. I know what it is to be a bird in a cage! Not gilded either. I say to hell with cruises!

Gene Holman

I was genuinely sorry to learn of the retirement recently of Gene Holman, chairman of the board of Standard Oil of New Jersey, because he was not only a top flight professional manager, but an industrial statesman with an international point of view and the long-range vision so sorely needed in these difficult times. Years ago Holman summed up his management technique: "Survey your project, organize it, delegate responsibility with requisite authority and supervise performance." Recently he made a speech which illustrates the high calibre of the man, and I quote a portion of it:

"Sometimes we are inclined to profess one philosophy and act according to another. We praise the idea of competition but, deep down, want it only for the other fellow. We preach free enterprise but go to governments when a problem seems a little bigger than usual. And so one of the real dangers in our present situation is that we may seek the short-term solution. We may seek to cut imports rather than strive to keep our exports competitive.

"A major interest of the United States is a high level of world trade. It would be tragic, indeed, if, after leading the world over the past twenty years in the direction of a more competitive international trading system, we were now to put aside the traditional principles that we have been vigorously preaching. We cannot have the benefits of free competition without the stresses and strains that go with it.

"One thing is sure: we cannot go back to some fondly remembered kind of world. Important breakthroughs in technology are making obsolete many of our social and political arrangements. Jet propulsion, electronic computation and communication, advances in nuclear physics and medical science are creating a world that is not only full of powerful new influences but also delicately balanced. Weary slogans and old patterns of thought will not be too useful in the nineteen sixties. Precisely what businessmen will need in the years ahead is perhaps difficult to determine, but at least three qualities seem to me essential:

"First, businessmen must possess a spirit of adventure.

"In the midst of the emerging forces of this era, the odds are rising fast against the timid. Perhaps it is still possible to live in a dream, but the hard fact is that mankind is changing in some basic ways.

"It is sometimes said that there is less risk-taking in business today than formerly. I doubt this; but certainly, if there are fewer risks taken today, the risks are bigger. We therefore need more than ever the spirit of initiative in business, just as we need initiative in adapting our whole society to the enormous changes that are crowding upon it.

"This suggests a second requisite: the spirit of adventure will be fruitful only as it is related to the needs of the hour and the world.

"The time when we could attend to our local affairs without reference to international events is long past. Such upheavals as the revolution in technology, the explosion of populations and the awakening of the peoples of Asia and Africa will continue their course. They will gather pace and power. The question is, are we capable of adapting ourselves to them? Here is the real contest between communism and the free nations. Which will be more responsive to the inexorable demands of the world as it is and as it will be?

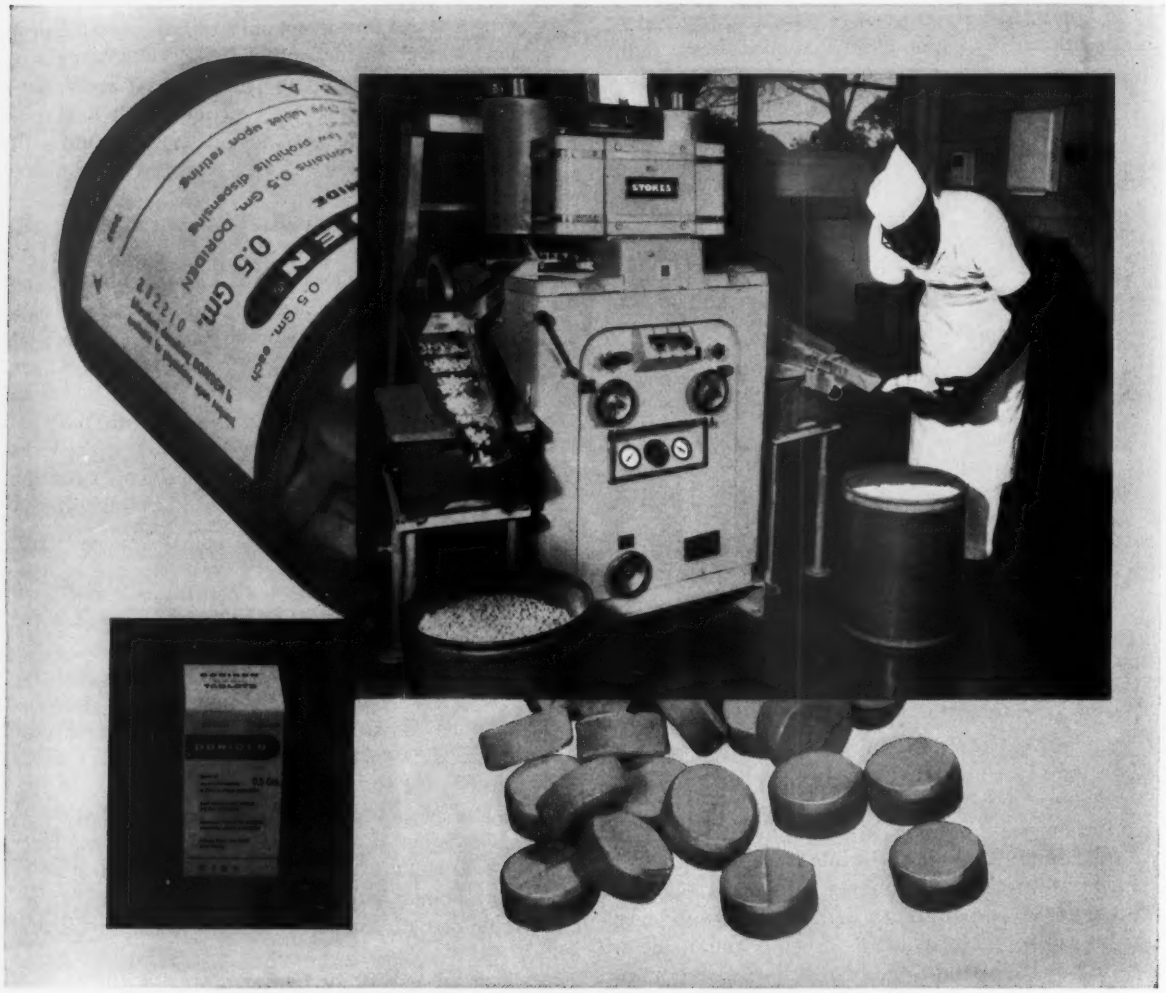
"History seems to be moving toward a climax. We cannot hope, without the advantage of historical perspective, to understand fully the forces that have been unleashed around the world. But leadership will certainly belong to those who strive constructively to create a wider pattern of order among the peoples of the earth.

"Thirdly, I believe that businessmen of the coming era must have a real sense of values.

"Neither business nor politics nor any other activity is an end in itself. Their end is man and his physical and spiritual development.

"Some people have expressed concern that the individual is likely to be lost in large organizations. Big organizations have not grown up by chance. With their virtues and their faults, they have been developed to accomplish big tasks, and there is no need to apologize for them. Yet it is important that, by way of balance, we consciously seek to protect and stimulate all the varied capacities of the human personality. We must foster not only the individual opportunity that comes from economic advancement but also the kind of atmosphere in which individual diversity can flourish at every level.

At CIBA Pharmaceutical Products, Inc., a Stokes Model 540 produces Doriden*... a non-barbiturate hypnotic and sedative.



CIBA GAINS EXTRA SAVINGS WITH STOKES HIGH SPEED MACHINE

It was expected that the Stokes Model 540, high speed rotary machine would have a greater TPM capacity than the two older machines it replaced . . . effectively reducing production time (cost). Something CIBA wasn't expecting is the additional savings realized through the advanced design features of the equipment. Here's why:

- compact design, with the drive in the base, requires up to 50% less floor space than other machines.
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"In the days ahead we will need a plentiful supply of fresh ideas. They will emerge only in a society that has the courage to tolerate the greatest independence of thought and action."

Word Power

"No matter how carefully management may say it, workers often do not understand what the boss is trying to get across to them. So reported Princeton's Opinion Research Corp. last week. Only 12 per cent of the workers fully comprehend the average company house-organ article, said the report.

"Many terms that management uses mean little to the worker, but could be put in words that workers can readily understand, said Opinion Research. Suggestions: Use *company earnings* instead of *company revenues*, *sales tax* instead of *excise tax*, *efficient production* for *productivity*, *Government ownership of business* for *socialism*.

"There are some words, the researchers found, that workers do not like to hear at all. *Corporation* conjures up a "selfish" and "ruthless" image, although *company* gets a friendly reception. *Piece rate* irritates workers, but they like the term *incentive pay;* and *free enterprise* evokes friendlier feelings than *capitalism*. Workers are not emotionally affected by the word *strike*, but *work stoppage* is associated by them with 'bad, harmful, and unfair' practices."

Time Magazine

Time Clocks

Just had a nice note from William C. Murphy, manager of public relations for Eli Lilly. In connection with my comment about time clocks in the March issue, he informs me that Lilly also does not require time clock punching. I appreciate this information. I wonder if there are any other large employers in the pharmaceutical or cosmetic industries who do not require employees to punch time clocks?

Thoughts for the Sixties

Effective supervision requires *super* vision.

One of the most important possessions of a supervisor is self-possession.

The surest way to fail in carrying out any project is to think of failure.

Management Training

Recently I attended the opening session of a management training course in England. The conductor of the course is an outstanding authority on management training. I agreed entirely with much that he said but I did not agree with his implication that training in management will *ipso facto* develop leaders. I think leadership is a talent born in a man. I do think, however, that courses in management techniques, especially when taken by young men, will improve the abilities of those fortunate people who were born with a latent spark of leadership. I think also that such courses may uncover latent leadership talent among people in whom such capability had never been suspected.

Confusing the approach is, I think, the lack of a commonly accepted nomenclature with regard to the various aspects of management. We have a tendency to confuse "administrator" with "manager," and both with "executive." I think an intelligent man can be trained to be a good executive and still lack the capacity to be a good manager. An executive is one who can execute a project or a department in accord with directives given him by a manager. I regard a manager as a person having broader responsibilities, broader training and broader vision than an executive, and possessing the capacity to conceive projects for subordinate executives to execute. An administrator represents the top echelon of management, and to be effective he must not only be skilled in the arts of management but he must possess inspiring leadership ability. He must be able to see his business whole and see it in relation to the economic and political forces that are re-shaping the world. He must be able to forsee the effect of those changing forces on his business, and have the capacity to plan accordingly. He must be a seer as well as a doer.

Odds and Ends

Sanitary bucket elevators designed for easy removal of interior elements for washing are being offered by The Bucket Elevator Co., 57 Union Place Summit, N. J. . . . Power-operated drum dumpers are offered by Sterling Fleischman Company, Bromall, Penna. These are particularly suitable for charging tanks and mixers from a common floor level. . . . Dennison Manufacturing Co., Framingham, Mass., have developed a method of applying decalcomania labels automatically at high speed to squeeze-bottles and other containers. The labels are printed in rolls on special paper. Registry is perfect. Heat and pressure applied to the label ribbon effects the transfer of the label to the container surface. Labeled containers are then heat-treated and fed directly to filling lines. The Borden Chemical Co. at Bainbridge, N. Y., has a very successful installation of this equipment. This process applied to polyethylene bottles is said to cut the cost of conventional silk screening by 70 per cent.

Radiation Chemistry

The ability of atomic rays to rearrange molecular structures so as to provide new and wonderful materials is one of the beneficial discoveries made possible by the atom bomb program. J&J is using atomic radiation to sterilize sutures in the final packages on regular production lines.

New textiles are coming along; new petrochemicals; new plastics. The army has discovered that intense radiation can preserve foods for long periods without affecting taste or color. A lot of work is be-

KIEFER PRESENTS

Two Performers

PERFORMER #1

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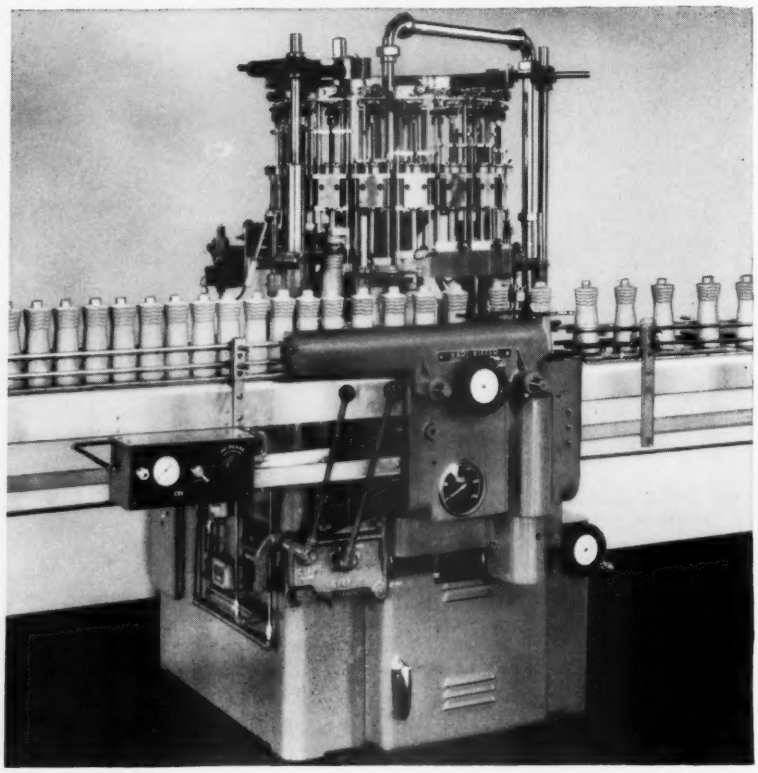
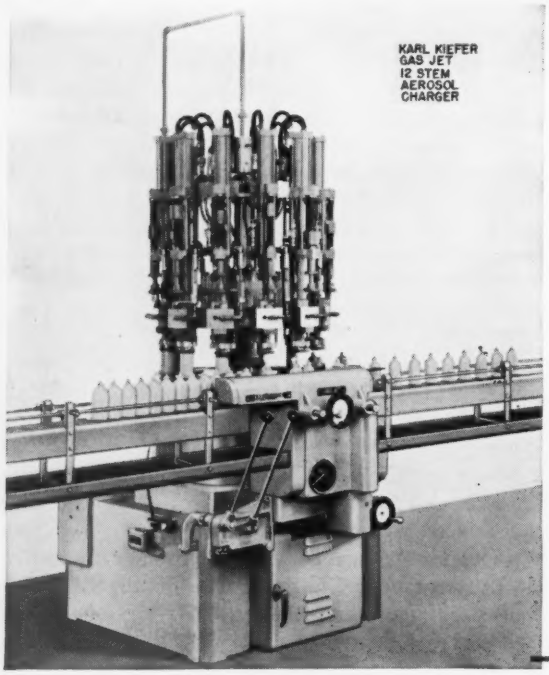
Here's the story—fills any size or shape container WITHOUT the use of a SEAL.
When the liquid reaches your pre-selected level, the flow quickly cuts off with hairline accuracy. Think of that—and especially with plastics.
Fillers built in a vast range of production speeds.





PERFORMER #2

KARL KIEFER

"Gas Jet"

AEROSOL CHARGER

Here's the story — in this development KARL KIEFER leads again in deftly and precisely measuring the propellent gas. Speeds unlimited—built in a wide range of production machines.

The Karl Kiefer Machine Co.

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ing done, I presume, on the therapeutic effect of radiation on pharmaceutical products. If we can keep the politicians from starting a disastrous war, most of us will live to see a wonderful new world.

Plant Maintenance and Engineering

The eleventh volume of the annual series, "Techniques of Plant Maintenance and Engineering—1960," has been published by Clapp & Poliak, Inc. A report on the Plant Maintenance and Engineering Conference held earlier this year in Philadelphia, it contains 341 pages, and is $10 postpaid from the publisher, 341 Madison Ave., New York City 17. The book includes the 34 papers presented at the conference, along with the texts of the discussions, comments, and questions and answers, and should be a major resource and reference in the field.

Pump Attachment for Viscous Liquids

The National Instrument Company, Inc., 2701 Rockwood Ave., Baltimore 15, Md., has developed a new pump attachment which adapts the Filamatic for filling semi-viscous and viscous fluids. Indentified as Type FDS, the pump will handle heavy oils, adhesives, resins, pigments, and the like, and is recommended for use on Filamatic models DAB-6, DAB-8, and DAB-16. Installable without tools, its liquid-contacting parts are of stainless steel, has Teflon sealing rings, and comes in four sizes covering a range from 0.06 to 8 ounces per stroke.

Redesigned Printer

The Colt Packaging Machinery Company, 51 Washington Ave., Cranston 7, R. I., has redesigned its Rite-Size Printer to permit use of vaposet paste type inks. A special conversion unit is available for Rite-Size Printers now in use. The printer, in conjunction with the Rite-Size Box machine, imprints corrugated carton blanks as they leave the take-off end of the Rite-Size Box Machine.

Ground Detector and Fault Finder

Parr Manufacturing Corporation, 44 Austin St., Newark, N. J., is manufacturing an improved Brunt Faultfinder to locate accidental grounds without shutting down production. The new model weighs 18 pounds, a third less than the original model, and can be operated by one man. Earphones with foam rubber covering aids hearing signals, and the system imposes only two amperes on the circuit.

Compact Labeler

A new, automatic straightline, continuous-motion labeling machine developed by MRM Company, Inc., 191 Berry St., Brooklyn, N. Y., offers the versatility of its larger labeler in a lower-priced unit for use when high speed is not necessary. The Continuous Motion SL-85 Labeler may be integrated into any conveyorized line for handling glass and metal containers with diameters between 1 X ¾ and 14 X 7 inches. It applies 45 to 85 labels per minute, handles foil, paper, and other materials in sizes from that of a postage stamp to 6 X 7 inches. The SL-85 has the same glue pickup and adaptability to rapid changeover as that of the larger labeler, and it may be installed as part of a filler-labeler or capper-labeler combination by coupling it with the discharge conveyor of either type machine.

Adiabatic Calorimeter

An adiabatic calorimeter specifically designed for determining the purity of reference compounds used in spectroscopic and mass spectrometric studies has been issued by Applied Physics Corporation, 2724 South Peck Road, Monrovia, Calif.

The Cary Model 41 requires liquid samples of only 0.5 ml., and purity determination may be made on samples over a temperature range of −130° C. to above 200° C. The calorimeter assembly can be removed or disassembled for convenient filling or cleaning. The annular design and small cross section of the sample container speed equilibration. By automatic temperature control of the isothermal and environmental shields surrounding the calorimeter, adiabatic conditions are maintained over a wide temperature range.

Hardness Tester

A new high-speed, hand-held tablet hardness tester originally designed by Chas. Pfizer & Co., Inc., for its own use, is now available to all pharmaceutical manufacturers. The precision device is said to be four times faster than existing instruments. The light compact unit can be used in the laboratory or at the tabletting machine.

As the tablet is crushed, the force is indicated in pounds and kilograms per square inch. The dial has a single indicator which remains at the reading until a reset button is pressed.

Permanently lubricated, its only maintenance is wiping with a damp cloth after use. It is packed in a fitted mahogany case, and is available from the company's Medicinal Chemical Department, 11 Bartlett St., Brooklyn 6, N. Y.

Self-Adjusting Ultrasonic Cleaner

A self-adjusting ultrasonic cleaning system has been developed by The Narda Ultrasonics Corporation, 625 Main St., Westbury, New York. Called the SonPlaster Automatic, it has a simple on-off switch which makes practical unattended large-scale production-line installation and remotely controlled equipment. Adjustment to compensate for variations in liquid level, operating temperature, and changes in work-load are unnecessary. A controlled spectrum of ultrasonic frequencies excite a multi-resonant transducer, giving uniform energy distribution.

Perfumer's Shelf

Perfuming Creams

The creation of a perfume for a beauty cream involves a certain number of fundamental rules according to K. J. Pfeiffer (*Parf. Cosm. Sav.* 3: 198, 1960), of which the following are the most important: compatibility of perfume and skin; the perfume should not react with the cream or affect the emulsion; the perfume should be able to cover the odor of the raw materials; the perfume should be stable to light. Moreover, since the cream is in intimate contact with the skin, the perfume must be absolutely non-irritating. Although dermatologists maintain that perfume is responsible for a large proportion of allergic responses, the modern perfumer has available to him many substances that are dermatologically harmless.

To avoid reaction with the cream ingredients and the emulsion, the perfume must be made up of ingredients known to be stable and not react with components of the cream. These reactions may result in degradation of the cream or alteration of the perfume character.

Treatment creams may contain ingredients of distinctive odor that should be masked and in these cases it is necessary to use an odor that blends with the material to be covered, so that a light odor requires a light perfume, etc. As regards the creation of a perfume, the perfumer, as much as possible, will proceed along classical lines and divide the mixture into three parts: head, heart, bottom. The head notes should be light, fresh and gay and able to cover, if necessary, the bad odor of cream ingredients. The heart consists of heavier products, evaporating more slowly. They impart its general character to the perfume and are responsible for continuity of the odor and its good harmony. Bottom notes come from slow evaporating products and act as fixatives by retarding the evaporation of more volatile constituents. The use of standard fixatives must be handled carefully in cosmetics, since cosmetic waxes and oils are excellent fixatives in that they retard evaporation. The perfumer should preferably use large ring compounds which both fix and "exalt" the odor.

The effect of the cream on the perfume and the perfume on the cream most both be checked, preferably by two to four month storage. Some samples should be kept in the dark and others exposed to light. At the end of the period, appraisals should be made as to changes in odor and discoloration and the cream should be checked against an unperfumed sample for variations in application properties and stability.

Another problem, often neglected, is the possibility of reaction between the perfumed cream and the package. Not only plastic containers, but also standard metallic tubes may on occasion profoundly alter the original perfume note. When these factors are considered they can readily be checked and required changes made.

New Perilla Oil

Ping-Hsien Yeh (*P.E.O.R.* 51: 293, 1960) found in the mountain area near Taipei a kind of wild perilla, 'Egoma,' *Perilla frutescens* Brit. var. *typica* Makino, the odor of which was quite different from that of ordinary 'Ao-Shiso,' *P. frutescens* Brit. var. *crispa* Decne, forma *viridis* Makino. The essential oil of this grass gave, on fractional distillation, a terpene fraction containing (—)-limonene, the amount of which was 31 per cent of the essential oil and was identified by its physical constants, molar refraction, the tetrabromide, and the racemized dihydrochloride.

The ester part was 0.5 per cent of the essential oil and, on hydrolysis, afforded (—)-piperitol and formic acid.

The terpene ketone fraction, which was 55 per cent of the oil, yielded two kinds of semicarbazones. That this fraction was (—)-piperitone was affirmed by the determination of the mixed melting points of the semicarbazones and the 2,4-dinitrophenylhydrazone of the terpene ketone with the corresponding derivatives of (—)-piperitone isolated from the oil of *Eucalyptus dives*. Further identification was performed by oxidizing the terpene ketone with potassium permanganate to the known oxidation product of (—)-piperitone, 2-hydroxy-2-methyl-isopropyladipic acid.

The presence of α-caryophyllene in the sesquiterpene fraction of the essential oil was confirmed by the mixed melting point determination of the nitrosate and nitrosochloride with the corresponding derivatives prepared from authentic α-caryophyllene.

The above experimental findings show that the oil under investigation contain 55 per cent (—)-piperitone, 31 per cent (—)-limonene, 6 per cent α-caryophyllene, 0.5 per cent (—)-piperityl formate, and other high boiling constituents.

Perilla oil from 'Ao-Shiso' contains about 50 per cent of perillaldehyde, about 9 per cent of (—)-limonene, and α-pinene in only small quantities. Sebe investigated an oil distilled from *P. frutescens* var, *viridis* Kudo which grows in Formosa, and isolated, as the principal constituent of this oil, a new ketone termed perilla ketone, the structure of which was also determined as β-furyl-isopentyl ketone.

In comparison with the known constituents of perilla oil given above, it is of much interest to note that the grass reported in the present work is morphologically almost identical with 'Ao-Shiso,' while its chemical constituents are quite different from those listed above.

These facts strongly suggesting that morphological classification, currently used in plant toxonomy, would become more rational, if chemical constituents of the plants were also taken into consideration.

Piperitone, the main constituent of the oils of *Eucalpytus piperita, E. dives, etc.*, is used as a starting material for the preparation of synthetic menthol and thymol. The grass under investigation is easily cultivated and grows so rapidly that it can be harvested twice a year. Furthermore, the yield of the essential oil is high and the content of (—)-piperitone is also as much as 55 per cent so that it is highly promising to cultivate it as a new source of (—)-piperitone.

The Composition of Citrus Oils

F. LaFace (*La France et ses Parf.* No. 15, p. 44, 1960) reported on the chemical composition of citrus oils and emphasized the remarkable contributions made by chromatography and spectrophotometry. These investigations utilized column, paper and gas chromatography and U.V. and I.R. spectrophotometry. A number of constituents, not previously mentioned, have been identified. These include, in bergamot oil, acetates of geraniol, terpineol, and nerol, C-9, C-10, and C-12 aldehydes, and citral. In lemon oil, the new compounds were the hydrocarbons octylene and p-cymene along with linalol and, in the evaporation residue, isopimpinelline. In sweet orange oil, the terpene fraction included along with d-limonene, traces of alpha and beta pinene and myrcene while the alcohols included nerol, geraniol and linalol, the latter as the acetic ester. For bigarade, the terpene fraction has the same qualitative composition as that of sweet orange oil. In mandarin, least known from the point of view of composition, several new constituents were characterized: the terpenes alpha and beta pinene, camphene gamma phellandrene and p-cymene, along with limonene, the alcohols linalol, terpineol, and nerol, octylic, nonylic, decylic and dodecylic aldehydes, citral and citronellal, terpinyl and linalyl acetates as well as methyl N-methylanthranilate. The presence of tangeretine was also noted.

Terpenes and Sesquiterpenes

W. Treibs and co-workers reported investigations on pinocarveol and betulenols (*La France et ses Parf.* No. 15, p. 52, 1960). Pinocarvyl acetate is isomerized by boric anhydride into myrtenyl acetate. Pinocarveol yields without rearrangement stable crystalline addition products with halogen acids which are reduced to pinocampheol and converted into l-campheolene aldehyde by silver acetate or organic bases.

Beta betulenol was found in the oil of mentha Piperita L. along with caryophyllene, beta caryophyllenic alcohol, and clovandiol. It is formed, along with caryophyllene oxide, by the autooxidation of caryophyllene. Alpha and beta betulenols give caryophyllane on complete hydrogenation and alpha and beta betulenals on oxidation with manganese dioxide or by the Oppenauer method, from which it may be concluded that the alcohols are of the caryophyllene type. Alpha betulenol is synthesized from caryophyllene by oxidation by means of selenium oxide. Lead tetraacetate attacks caryophyllene at the semicyclic double bond. Caryophyllene oxide is isomerized to a bicyclic ketone (caryophyllenone.)

Peroxides in Essential Oils

In the deterioration of essential oils, the first stage appears to be the formation of peroxides and hydroperoxides. To determine the extent of this deterioration, iodimetric and titanometric methods, among others, have been suggested. F. H. L. Van Os and C. Scholtens (*La France et ses Parf.* 3: No. 13, p. 30, 1959) have compared the two methods and concluded that fixation of iodine by oils containing unsaturated compounds in the presence of peroxides and potassium iodide, does not exceed about 6 per cent of the peroxide index. The iodimetric determination of the peroxide index gives higher results than the titanometric method in spite of the stronger reducing action of the titanium trichloride solution, and the absorption of the iodine by the double bonds. This phenomenon can be explained by the different reaction vehicles in the two methods. The iodimetric method is recommended because of its universal validity and its easier procedure.

Sesquiterpenes

A number of sesquiterpenes, many known for a long time, were the object of structure studies at the Institute of Chemistry at the Czechoslovakian Academy of Sciences by V. Herout (*La France et ses Parf.* No. 14, p. 15, 1960). A structure was proposed for cubeb camphor and for two aromadendrenes. One of the latter is a new compound. Ledol and viridiflorol have been proven to be stereoisomers globulol and their relationship to the two aromadendrenes established. The alpha and beta betulenols are secondary alcohols with a caryophyllanic skeleton. The structures of a group of compounds containing a ten membered ring, germacrone, costunolide, cnicine, and parthenolide, were also studied. The absolute configuration of a number of centers of symmetry of these substances was determined. The bitter principle of artichoke leaves has been named cynaropicrine and it seems to be of the guaianolide type.

Vanilla Control

R. Pottier (*La France et ses Parf.* No. 15, p. 62, 1960) is studying methods of control of vanilla beans to determine adulteration, since quantities of vanilla beans offered for sale and quantities of products presumably made from beans and offered for sale do not match. The author describes the preparation of extracts and describes the A.O.A.C. and the Boyce Thompson Institute methods of control. These methods are valuable, but the problem of detecting adulteration is still a difficult one. Much is still to be done, but new techniques cannot be made official until multiple controls prove their validity.

Diterpenes

The study of the less volatile constituents of jasmine oil by E. Lederer (*La France et ses Parf.* No. 14, p. 28, 1960) has led to the discovery of free phytol and two new aliphatic diterpenes: isophytol and geranyllinalol. The latter is probably an important intermediate in the biosynthesis of phytol, di- and tri-cyclic terpenes, caroteneoids and certain odor constituents of jasmin. The "chromatoplate" method has been very useful in this study and several applications of the method were described. A chemical transformation of sclareol permits the determination of the stereochemical structure of labdanolic acid. A study of the structure of darutigenol, new tricyclic diterpene triol, permits generalizations on the stereochemistry of certain sesqui and diterpenes.

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Available on request—"Panthenol in Cosmetics", by S. H. Rubin, L. Magid, and J. Scheiner, reprinted from Proceedings of the Scientific Section of The Toilet Goods Association, Number 32, December, 1959.

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Compounder's Corner

Dihydroxyacetone

Dihydroxyacetone (DHA), or ketotriose, is usually indexed under its systematic name 1, 3-dihydroxy 2-propanone and its properties and application are reviewed by D. M. Bryce (*Pharm. J.* p. 491, June 11, 1960). It is a colorless, somewhat hygroscopic, crystalline solid, stable under cool conditions, and having a sweet, cooling taste. Cryoscopic measurements indicate that it is a dimer, but either melting or warming to aid solution brings about rapid regeneration of the monomer. Reversion to monomer is also rapid in aqueous solution when freshly prepared DHA is used! it becomes slower as the age of the dimer increases.

Its solubility characteristics generally are dependent on the form of molecular arrangement. DHA as the monomer is very soluble in cold water, alcohol, ether, and acetone. The dimer is only slightly soluble in cold alcohol, ether and acetone. Again, the solubility characteristics of the monomer are obtained in these solvents by warming. Both monomer and dimer are insoluble in hydrocarbons. The melting point of the pure compound is about 80° C. Commercial material is stated to melt between 69 and 74° C.

DHA is an exceedingly reactive molecule. It can undergo oxidation, esterification, cyclization, and condensation reactions. It reduces Fehling's solution with the formation of glycerol, it forms bisulphite compounds, and is converted into a corresponding aldotriose, glyceric aldehyde, on warming in pyridine.

Dihydroxyacetone may be prepared synthetically by controlled oxidation of glycerol. However it is more readily prepared by biochemical methods when it is formed as a result of oxidation of glycerol by a variety of micro-organisms, e.g., *Acetobacter suboxydans, Aerobacter œrogenes, Bacillus subtilis, Bacterium oxydans, Bacterium succinicum, Streptomyces spp.*

Puskas reported 90 per cent conversion of glycerol using *Acetobacter suboxydans*, and 70 per cent recovery from crystallization. A species of *Acetobacter* is also used by the Wallerstein Co. in the United States for commercial manufacture. Development of this microbiological synthesis has resulted in the elevation of DHA from a laboratory chemical of theoretical interest to an article of commerce.

Apart from its production by micro-organisms it is readily formed during mild alkaline degradation of sugars and exists universally in nature as the phosphate—which has been shown to be one of the stages in the breakdown of carbohydrates in the animal and plant body. The general scheme of glycolysis in animals is: Glycogen ⟶ Hexose ⟶ Triose ⟶ Pyruvic Acid. The pyruvic acid is then removed by means of the sequence of enzymic reactions that is known as the Kreb's cycle. Alternative metabolic routes *via* pentose are also believed to involve the triose. DHA has been detected in the urine in cases of insulin resistant diabetes.

DHA has been employed in the treatment of cyanide poisoning. It is said to have been used in the treatment of diabetes. It has also been shown to have antiviral activity when tested against influenza and Newcastle disease virus in embryonated egg. But it is expected that new and more extensive uses will be found as the material becomes freely available. For example, condensation with sulphonamides yields water-soluble resins which are claimed to be useful as tanning agents, wood preservatives and pharmaceutical and dyestuff intermediates. Some nitrogenous derivatives are also stated to have antitubercular activity. Another suggested use is as a catalyst in promoting formaldehyde condensation reactions and in polymerizations, e.g., styrene-butadiene; it may also find use in modifying starches, textiles and paper products.

Use of DHA in the cosmetic field depends on its ability to impart a brown stain to the skin. It has been stated that this is due to its forming colored reaction products with the aromatic amino acids of the keratin of the skin—tyrosine, tryptophane and phenylalanine—which would presume some sort of relationship with normal melanin which is also formed from tyrosine by means of a sequence of oxidation reactions.

In fact, the nature of the reaction is not known with certainty, as DHA is a very reactive molecule. However, it is perhaps significant that it is only possible to develop a slight brown stain on washed and bleached wool after a number of applications of aqueous alcoholic DHA. The surface of the finger nail also fails to develop any marked color on application of the reagent; but palmar sweat collected on filter paper reacts to give a typical brown stain. A similar stain is readily demonstrated on filter paper using lysine or glycine, so that it seems likely that what we really have here is a variant of the Maillard reaction, a reaction which is perhaps better known to the food chemist than to the cosmetic chemist.

The food chemist meets it in connection with troublesome formation of color in juices containing sugars, which are liable to break down, particularly when heated in weakly alkaline solution. The monosaccharides and simpler reaction products combine with amino acids which are always present in the juice to give these dark colored products, variously known as humans or melanoidins. Here, the preliminary product is thought to be an N-glycoside which is subsequently convert-

ed into either humin or hydroxy methyl furfural. The actual reaction between DHA and lysine to produce a dark humin or melanoidin was demonstrated some years ago by Partridge and Gottschalk, and similar observations have been made using glycine and alanine.

A further example of this reaction is of widespread occurrence. Namely, the formation of dark colored stains on teeth, which has been associated with soluble carbohydrate ingestion since Elizabethan times. The reaction product here goes by the name of melanoidin, the tendency being to use melanoidin in animal contexts and humin in vegetable contexts, and it is clearly the same sort of product resulting from the action of carbohydrate breakdown products on the organic matrix of the tooth. The color reaction always occurs slowly and the stain is indelible, so that in cosmetic use it only begins to fade after a couple of days or so as the external cells of the epidermis are lost by normal attrition. Unless further application of the reagent are made this can result in development of a mottled or patchy appearance.

The strength of DHA used in cosmetic preparations lies in the range 1.5 to 3.5 per cent in aqueous ethanol with, if desired, some additional humectant and surfactant to modify the wetting and spreading properties. Many preparations currently marketed also contain a little vitamin D but this would appear to have no useful function. From the experimental point of view 3 per cent. DHA in 50 per cent ethanol has been proved to be quite satisfactory. When this is applied to the skin, the first sign of coloration is usually evident after about one hour. Color continues to develop for several hours until it attains maximum intensity.

The stain which is formed within the epidermis is a rather reddish brown, and as might be imagined from the nature of the reaction, it varies in intensity with the amount applied, the site of application and the individual. Successive applications may be made to build up the color, which, it must be emphasized, is stated to confer no protection from the sun's rays. This product is in no way a sunscreen, and, indeed, by darkening the skin without exercising any screening effect it may be expected to result in some degree of hyperæmia with consequent slight increase in sensitivity to ultra-violet radiation. There are, however, sunscreen preparations marketed that contains DHA in addition to a regular screen.

The preparation was first sold as an after-shave lotion—the after-shave "slant" being presumably intended to improve acceptability in a conservative male market. For best results the instructions say that the product should be applied three or four times at hourly intervals during the course of an evening. Thereafter, a single application daily will be necessary to maintain the tan. The lotion is claimed to be as safe as water on the skin and reference has been made to penetration, sensitization and toxicity tests. In view of the nature of the material and its biological status one would perhaps be justified in not expecting any high incidence of untoward reactions. However, as the human body is capable on occasion of becoming auto-immune, sensitization cannot be completely ruled out. There is, however, no suggestion that the incidence is particularly high and it would be interesting to have confirmation that cases of sensitization are in fact due to the DHA and not to any other lotion component.

From the purely practical point of view the disadvantage of this sort of product would appear to be the difficulty of producing an even application when the results of application are not immediately visible. There is also what might be called the withdrawal effect to be considered. The advantage is, of course, the durability of the color produced. It is claimed that this product is not a dye. That is a matter of definition. There appears to be a vogue at the present time for claiming that coloring and staining materials are not dyes. Presumably vat dyes are not dyes because in many instances they are employed as colorless solutions. Be that as it may, in this product we have a variant on an old theme with the advantage of a durable stain and the disadvantage that you cannot see what you are doing until after you have done it.

Fatty Acid Sulfonated Amides

Carboxylic acid amides of α-sulfopalmitic and α-sulfostearic acids were prepared from ammonia, ethylamine, ethanolamine, isopropylalcoholamine, diethanolamine, and N-methyltaurine, and were isolated as the sodium, ammonium, or ethanolammonium salt by J. K. Weil, A. J. Stirton and R. G. Bistline, Jr. (*J. Amer. Oil Chem. Soc.*, 37: 295, 1960).

The solubility of the α-sulfonated amides increased with substitution of alkyl, hydroxyalkyl, and sulfoalkyl groups at the nitrogen atom.

Most of the sodium salts of the α-sulfonated amides have good or excellent stability to calcium and other divalent ions and are excellent lime soap dispersing agents. The ability to disperse lime soap curd indicates the α-sulfonated amides may find use in soap-syndet combinations.

Peroxide in Zinc Ointments

The production of hydrogen peroxide by the combined action of zinc oxide, water, oxygen, and ultraviolet light is well established by this work by H. A. Lozada and E. P. Guth (*Drug Standards* 28: 73, 1960) and previous works. The major problem has been associated with the quantitative measurement of the hydrogen peroxide. In the work of Blubaugh and Guth when a number of fixed oils and liquid petrolatum were studied it was shown that a wide variation of measurable peroxide was obtained with the various oils when processed in the form of calamine liniment. It appears as the result of this work that hydrogen peroxide is produced in all systems containing zinc oxide-water-oxygen and activated by ultraviolet light. The oxidation of the cholesterol component naturally present could account for the low peroxide values obtained with certain fixed oils. Peroxide is shown to be produced in considerable quantities when zinc oxide is incorporated into white ointment in a relatively short period of irradiation if the system is at a temperature to liquefy the vehicle. At temperatures below the fusion point of the base only traces of peroxide were determined. However, at 55°, a tenfold increase in peroxide was produced. With polyethylene glycol ointment, zinc oxide produced a high level of peroxide at all temperatures since water when added to the polyethylene glycol ointment produced a liquid system at all temperatures.

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Industry's Books . . .

Medicine Today: A report On A Decade Of Progress, *by Marguerite Clark, 360 pp., Funk & Wagnalls Co., New York, (1960), cloth,* **$4.95.**

This report, derived from personal interviews with dozens of the best-known practitioners and researchers in the country today, is presented so that the layman can see and understand the whole dramatic picture of medical progress. This picture includes the new techniques of surgery and radiation as well as the drugs that will halt the great killers, heart diseases and cancer; oral drugs that would revolutionize the understanding of diabetes; the really hot news in the prevention and treatment of the so-called "nuisance diseases"—the common cold, tooth decay, acne, and ulcers; the accomplishments of various foundations for aiding those afflicted with central nervous system disorders, such as muscular dystrophy, multiple sclerosis, and cerebral palsy; the new techniques for helping the millions of adults and children who suffer from mental disorders; discoveries about the effects of atomic fallout on human bones and tissues; progress in the treatment of alcoholism; the medical problems of the aged; rehabilitation of the crippled and disabled; new treatments of allergies, rheumatism, and arthritis; the story of how drugs are produced; and an examination of hospital conditions. The book is well written and seems quite authoritative.

Fats And Oils (An Outline of Their Chemistry and Technology), *by H. G. Kirschenbauer, Head of the Patent Liaison Div., Colgate-Palmolive Co., Second Ed., 240 pp., Reinhold Publishing Corp., New York, (1960), cloth,* **$7.00.**

The second edition of this book includes the latest information on the chemical structure, methods of processing, and uses of both animal and vegetable oils and fats. Among the subjects discussed are autoxidation, rancidity, fat stabilizers, cholesterol in diet, selective hydrogenation, chromatography of lipids, and sequestering agents. Numerous tables, diagrams, and illustrations amplify the textual material.

Newer Virus Diseases (Clinical Differentiation of Acute Respiratory Infections), *by John M. Adams, M.D., Ph.D., University of California, 292 pp., The MacMillan Co., New York, (1960), cloth,* **$5.75.**

This book describes the epidemiologic and clinical features of the various influenza-like diseases, with emphasis on etiologic diagnosis as a basis for wise therapy. It covers: The Myxoviruses—Influenzae A, B, and C; para-influenza viruses (hemadsorption and croup-associated). The Adenoviruses. The Enteroviruses—Coxsackie viruses (A and B), polioviruses, and the recently discovered ECHO viruses. Bacterial, Fungal, and Rickettsial Diseases in which respiratory symptoms are predominant and other diseases caused by respiratory viruses. There is also a section on the common cold as a possible entity, although it is recognized that every disease discussed in this book may at some time in its development mimic the symptoms of what people call "colds."

An Introduction To Pharmacology, *by J. J. Lewis, Senior Lecturer in Experimental Pharmacology, University of Glasgow, 826 pp., The Williams & Wilkins Co., Baltimore, (1960), cloth* **$11.**

In the era of scientific medicine physiology has given birth to numerous off-spring, and not the least vigorous of these progeny is pharmacology. Mr. Lewis's book provides a logical approach to the subject. He rightly emphasizes its chemical basis and explains the significance of chemical structure in relation to pharmacological action. He allots a fair amount of space to chemical aspects—which are of course indispensable to the study of pharmacology as we know it today. The precise mode of action of drugs is helpfully discussed by resorting to the terminology of the biochemist; and the justification for using drugs therapeutically by physicians and by veterinary surgeons can thus be anticipated. The book can be expected to meet the needs of science students studying experimental pharmacology, and it will be valuable to medical and veterinary students relating pre-clinical and clinical studies.

Style Guide For Chemist, *by Louis F. Fieser and Mary Fieser, Harvard University, 116 pp., Reinhold Publishing Corp., New York, (1960), cloth* **$2.95.**

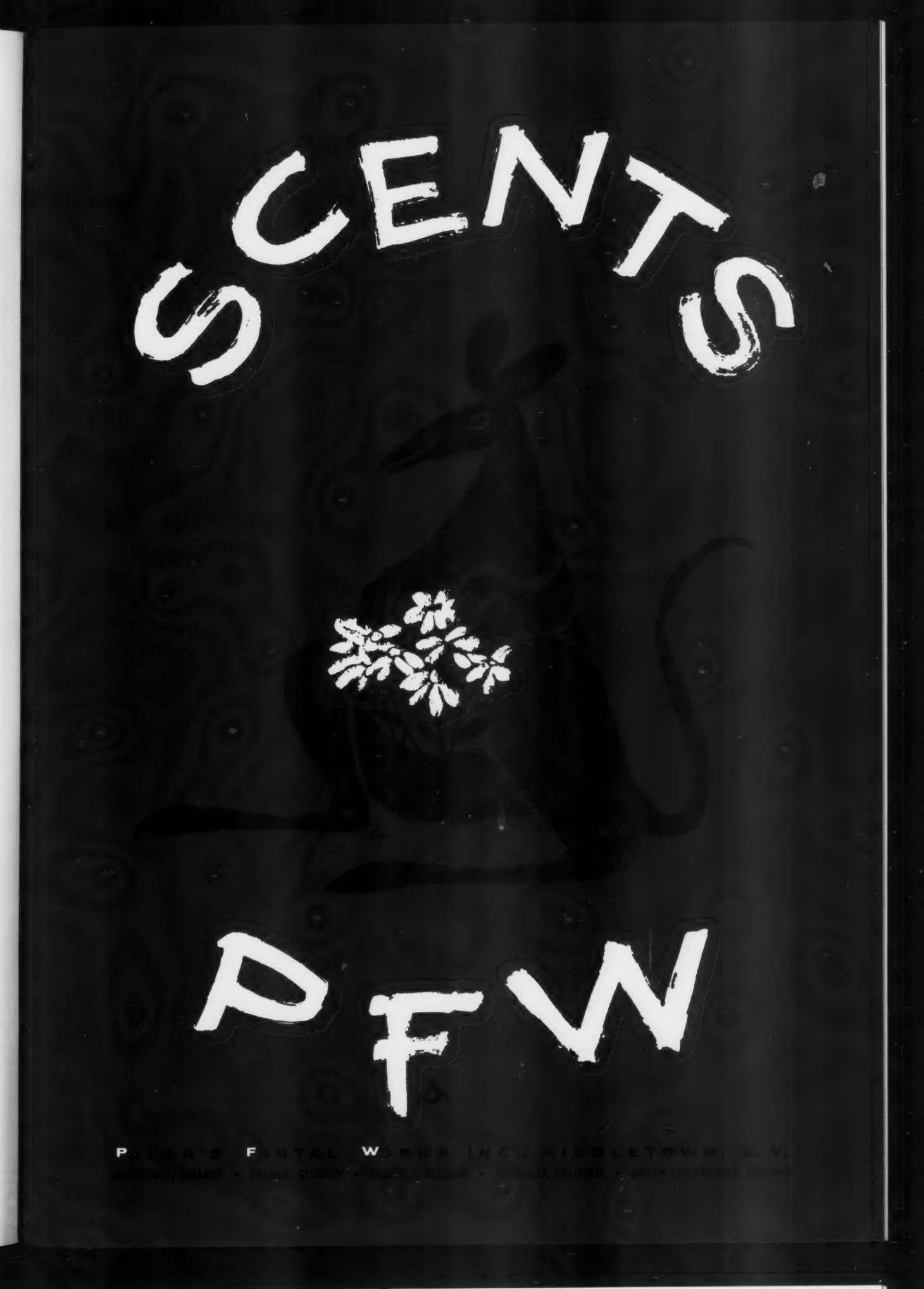
Without aspiring to style at a literary level, a scientist can learn to put action into his sentences that will hold the reader's attention. Readers of the "Guide" will find the commentaries on points of grammar and rhetoric surprisingly interesting. The book contains more information of use to the chemist on spelling, abbreviation, hyphenation, punctuation, and choice of words than any other source. It also includes suggestions on speaking, as well as recommendations for the pronunciation of words, names of scientists, and Latin and Greek prefixes. This is a book written by chemists for chemists.

Nutritional Evaluation Of Food Processing, *Edited by Robert S. Harris, Ph.D., Massachusetts Institute of Technology, and Harry Von Loesecke, S.B., U. S. Department of Agriculture, 612 pp., John Wiley & Sons, Inc., New York, (1960), Cloth,* **$12.**

This work discusses the nutritional effects of the processing of foods as they proceed from the place of origin to the point of consumption. In most cases food processing causes a reduction of the nutritional value of a food. The main purpose of this book is to evaluate the known effects of processing upon the nutritional values of foods, and to indicate how certain processing procedures may be altered to minimize losses in nutritional value.

Glass, Its Industrial Applications, *by Charles John Phillips, School of Ceramics, Rutgers University, 252 pp., Reinhold Publishing Corp., New York, (1960), cloth,* **$6.95.**

This book covers the manufacture, physical and chemical properties, and particularly, the applications of all types of glass. It is directed to the users—engineers, scientists, production and purchasing personnel—who are involved in the design, specification, testing, fabrication, purchase or sale of glass products. The book reflects all the recent advances in the field and includes new information on such subjects as glass bead reflectorization and the "floot Glass" process for making flat glass.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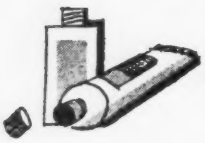


Advancing Therapy

Hypodermic Needle Improvement

A common complaint received by pharmaceutical manufacturers concerns the fragmentation or "coring" of rubber closures on multi-does injection packs, when pierced with a hypodermic needle. The recent introduction of diamond-pointed veterinary needles has increased the number of complaints received of particles of rubber found in injection solutions after the insertion of such needles, particularly if disc closures are used. It may therefore be of interest to examine the factors which influence this type of fragmentation.

If the surface of a rubber stopper or disc is examined under low magnification after piercing several times with a No. 20 hypodermic needle according to W. Padgett (*Pharm. J.* p. 471, June 4, 1960) it is highly probable that a number of cavities will be observed.

The number of sizeable fragments found in the injection solution will normally correspond to the number of cavities on the surface of the stopper, indicating that practically all cores are cut from the top surface by the heel of the needle as it pushed through the closure. As a needle is inserted into the centre portion of the rubber closure, the cut produced by the point of the needle is extended into a "U" shape producing a flap hinged at one side. As the needle advances into the rubber, the centre acting force created by compression of the stopper pushes this hinged flap into the only available space, that is, the sloping side opening of the needle.

When the heel of the needle reaches the hinged part of the flap several things may happen. If the heel of the needle is smooth and rounded, and the rubber soft and flexible, the flap will stretch as the heel of the needle advances and finally pull out allowing the needle to slide through without cutting a core. The horse-shoe shaped flap left on the stopper surface can be readily seen under low magnification. If, however, the heel is sharp as is usually found on new needles, and the rubber somewhat rigid, the flap will be cut through at the hinge thus producing a core, which will be carried through into the vial. A sharp darning needle of the same diameter as a hypodermic needle found to produce cores, can usually be passed through similar rubber closures a hundred times or more without producing any cores at all. It has already been shown that if the heel of needles which regularly produce cores when passed through pharmaceutical closures are dulled with a Swiss needle file, no further cores wilrl be produced under the standard conditions laid down for the test. Although other factors similar to those described below—

(*a*) the design of the sealing head
(*b*) the amount of inorganic filter in the rubber mix
(*c*) the head pressure used during sealing
(*d*) the inclusion of paraffin wax in the rubber
(*e*) thickness of diaphragm to be punctured—

also have some influence on the coring rate, it is the condition of the needle itself which has by far the most significant bearing on the production of cores. The diamond-pointed veterinary needles mentioned earlier generally have a sharp, "V"-shaped heel, and this is ideal for trapping the hinged flap and producing cores, particularly on disc closures. As most pharmaceutical rubber closures are chosen for the special properties of certain types of elastomers, e.g., low moisture permeability, oil resistance, or compatibility with an injection solution, it is not always practicable to adjust the rubber mix to give the best coring properties.

In order to compensate the effect of needle variation, it was found preferable to cary out a comparative test between stoppers of known performance and new samples. Five vials sealed with the test closure, and five vials sealed with the standard closure, are placed into groups of ten, and each closure is pierced ten times at right angles to the surface with a moistened No. 20 needle. The surface of each closure is moistened with ethanol before piercing, and a new needle is used for each group of ten vials. Water free from particles is injected through the needle after each puncture and the cores in each vial are then counted by viewing under a good light against a background of contrasting color.

As an alternative to the laborious procedure of counting fragments in a swirling medium, an examination of the stopper surface at x 25 magnification will give a quick and reliable indication of the number of cores produced, although stoppers with a high proportion of inorganic filler will also shed in addition a large number of dust-like fragments.

A contracted version of this test was recently carried out to compare the coring properties of diamond-pointed and orthodox No. 20 hypodermic needles. One needle of each type found to produce the highest number of cores was then used for

a further series of tests on similar closures after the heels had been dulled with a file.

After washing and sterilizing, the following types of rubber closures were applied to standard 5-mil antibiotic vials with crimped-on aluminum seals, using uniform head pressure:

(*a*) 2 mm. butyl rubber discs.
(*b*) Natural rubber stoppers.
(*c*) Oil-resistant nitrile rubber (Hycar) stoppers.
(*d*) Butyl rubber stoppers.
(*e*) Natural rubber—high filler content.
(*f*) Gum stock.

Groups of five vials were sealed with each of these six types of closure and each was then pierced ten times with the two needles, water being injected after each insertion. The operation was then repeated on a further five closures from each group after the heel of each needle had been dulled with a watch file.

The results show quite clearly, that the dulling of the heel of a needle is far more effective than variations of rubber mix, or the use of discs in place of stoppers, in the prevention of coring. If hypodermic needle manufacturers can be persuaded to "dull" the heel of new needles, coring of pharmaceutical rubber closures when pierced would be virtually eliminated, although, of course, needles which are re-sharpened would also need "touching up" with a watch file.

Diuretic Efficacy

A new method for ascertaining diuretic efficacy, carried out in bed-patients in congestive failure within the framework of a highly effective therapeutic regimen which included rest, digitalization, and salt restriction, was applied by H. Gold et al (*J.A.M.A.* 173: 745, 1960) in a comparison of the maximally effective doses of chlorothiazide and meralluride, a 2-Gm. oral dose of the former and a 2-cc. intramuscular dose of the latter. Each patient received both agents, but not simultaneously, the sequence alternating within and between patients. The comparisons were made in terms of 24-hour weight losses. Only the first four doses with paired responses provided the data which were analyzed by signs and the sign test, also by ratios with confidence limits. Contrary to the prevailing opinion, the 2-Gm. oral dose of chlorothiazide was found to exert only 40 per cent of the diuretic effect of the 2-cc. intramuscular dose of meralluride.

Cholesterol Reduction

According to one of the principal hypotheses concerning the pathogenesis of atherosclerosis, a high level of plasma-cholesterol is one of the initiating factors. Cholesterol is continuously synthesized in the body as well as being supplied in the diet of all but the strictest vegetarians, and it accumulates in the body whenever the supply (endogenous synthesis plus dietary content) is greater than elimination by degradation.

If excess of cholesterol is a cause factor in initiating human atherosclerosis—and there is as yet no proof of this—lowering the cholesterol content of the body might be a desirable preventive or therapeutic measure. From the known facts of cholesterol metabolism, one might attempt to decrease the cholesterol content of the body in three general ways: (1) by inhibition of absorption from the intestine, (2) by stimulation of elimination, or (3) by inhibition of endogenous synthesis. The experiments report here by G. Popjak, R. H. Comforth, K. Clifford (*The Lancet I*, p. 1270, 1960) are related to the last possibility.

The biosynthesis of cholesterol is one of the most complex biological processes yet revealed.

Theoretically one could inhibit cholesterol synthesis by interfering with any one reaction in the long synthetic chain. But it seems undesirable to interfere with the reactions preceding the formation of mevalonic acid, since acetyl-coenzyme A, acetoacetyl-coenzyme A, and 3-hydroxy-3-methylglutaryl-coenzyme A are also involved in metabolic reactions other than the synthesis of cholesterol. Beyond the stage of mevalonic acid, on the other hand, interference would cause more specific inhibition of sterol biosynthesis; for the only metabolic process, other than the biosynthesis of sterol, in which mevalonic acid is known to be involved in animals is the synthesis of the side-chain of ubiquinone—i.e., coenzyme Q.

During investigation of the biosynthesis of cholesterol in liver-enzyme preparations, some of the intermediates—but mainly farnesyl pyrophosphate—were found to be metabolized by liver enzymes on an alternative pathway to carboxylic acids—e.g., to farnesoic (*trans-trans*-3,7,11-trimethyldodeca-2,6,10-trienoic) acid. These carboxylic acids, of which farnesoic acid is only one, are not intermediates in cholesterol biosynthesis. On the contrary, they represent part of a pathway for the catabolic disposal of intermediates, like farnesyl pyrophosphate, and they also inhibit the utilization of intermediates of cholesterol synthesis; hence they may be part of a physiological controlling mechanism. Although Dituri et al. (1957) reported that farnesoic acid was incorporated into cholesterol, this could not be confirmed. The inhibitory action of farnesoic acid on the synthesis of cholesterol from mevalonate in vitro was first described by Wright and Cleland (1957), and we readily confirmed this observation. It was then a logical step to test analogues of farnesoic acid for their effect on cholesterol synthesis, in the hope that some might prove more powerful inhibitors than farnesoic acid itself.

Analogues of farnesoic acid (*trans-trans*-3,7,11-trimethyldodeca-2,6,10-trienoic acid) were tested for their effects on the biosynthesis of cholesterol from mevalonate in liver-enzyme preparations.

Four substances—3,7,11-trimethyldodecanoate; 3,7,11-trimethyldodeca-2,10-dienoate; 3-hydroxy-3,7,11-trimethyldodecanoate; and 3-hydroxy-3,7,11-trimethyldodeca-6,10-dienoate—in concentrations of 1 m*M* (1 μmole per ml.) abolished completely the synthesis of cholesterol from mevalonate. A fifth substance—3,7,11-trimethyldodec-2-enoate—had no inhibitory action. The active substances were far more potent inhibitors than was farnesoic acid.

The effect of 3,7,11-trimethyldodecanoate may be attributed almost entirely to its inhibition of mevalonic kinase. Although the other three inhibitors affected mevalonic kinase, they probably also act on reactions catalyzed by other enzymes in the biosynthetic chain of cholesterol.

Testing the inhibitors of cholesterol biosynthesis in vivo seems to be justified because they may lower body cholesterol levels by decreasing endogenous synthesis.

Trade Literature

Flavor Catalog

Florasynth Laboratories, Inc., 900 Van Nest Ave., New York City 62, has issued a Revised Flavor Catalog. Its 32 pages list all the company's important flavors and flavoring materials. Of special interest is the listing of medicinal, pharmaceutical, and vitamin flavors, and entrapped powdered flavors, as well as colors. Many new items are included, and all branch offices and foreign affiliates are listed.

Industrial Chemicals

A price schedule of industrial chemicals has been made available by Commercial Solvents Corporation, 260 Madison Ave., New York City 16. Changes since the previous listing are indicated, and shipping notes as well as alcohol prices are included. P.S. No. 51 includes the telephone numbers of its branch offices throughout the United States.

D&O Ammomasques

Fragrance masks for ammonia products, a new line available from Dodge & Olcott, Inc., 180 Varick St, New York City 14, are described in D&O Bulletin No. 4, titled Ammomasques.

Triosul

A booklet, I-178, describing Triosul, new patented stabilized liquid sulfur trioxide, is available from Monsanto Chemical Company, Inorganic Chemicals Division, 800 North Lindbergh Blvd., St. Louis 66, Mo. The product is a strong sulfonating, sulfating, dehydrating agent used primarily in production of certain organic chemicals.

Careers in Pharmacy

A new edition of the 32-page booklet, Your Career Opportunities in Pharmacy, is offered to educational and professional groups by Educational Services Dept., Chas. Pfizer & Co., 800 Second Ave., N. Y. C. 17.

Drug Packaging Equipment

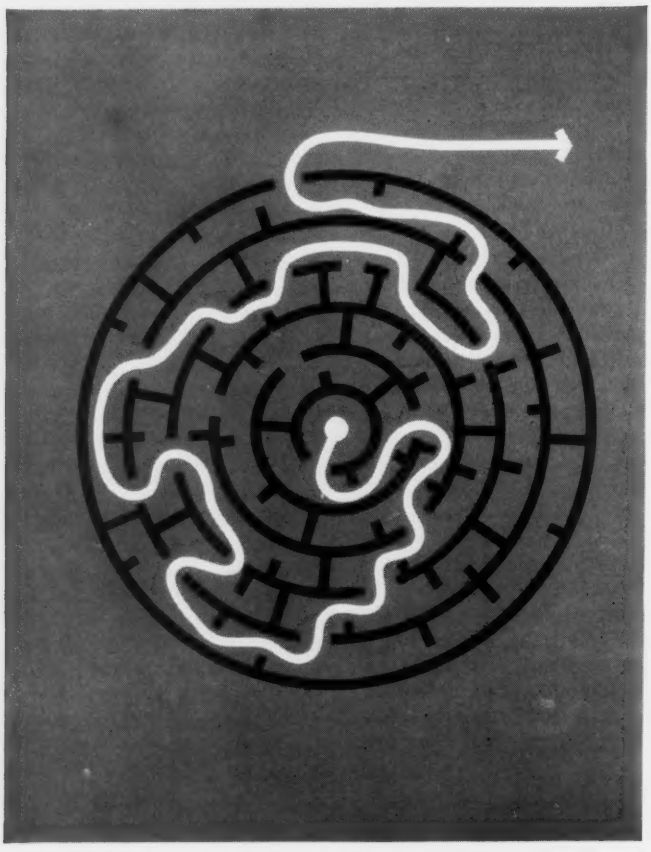
An illustrated, six-page brochure, Pharmaceutical Packaging Equipment, available from the Lakso Company, Inc., P.O. Box 442, Fitchburg, Mass., describes the company's line, including new items.

Testing Equipment

Philips Electronic Instruments, 750 South Fulton Ave., Mount Vernon, N. Y., has issued a 12-page booklet, Norelco Non-Destructive Testing Equipment, containing engineering facts and specifications for many X-ray test units for radiography and fluoroscopy. Photographs and drawings, and information on auxiliary equipment are included.

Emulsifier

A 20-page bulletin describing Ceramol, a specially formulated, versatile emulsifier for cosmetics and pharmaceutical applications, is available form Aceto Chemical Co., Inc., 40-40 Lawrence St., Flushing 54, N. Y. Full descriptive details, suggested formulations, clinical information, and a bibliography are included. (*Continued on page 126*)



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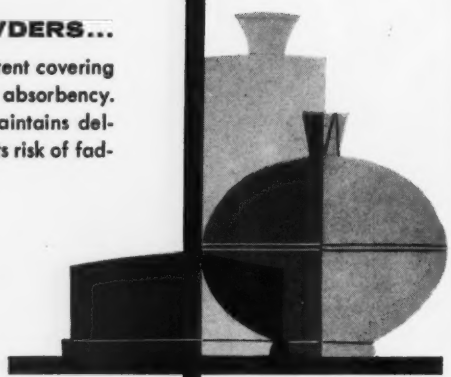

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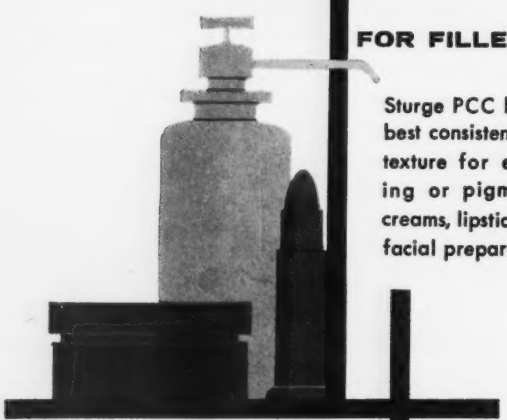

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Established 1850

Readers' Questions . . .

Soap Shampoo pH: *I would like to make a soap shampoo with a neutral or even slightly acid pH value that would more nearly match that of the normal scalp and have less drying effect on the hair. Can you give me any suggestions that might be useful in this problem?* NEW YORK.

You're up against a losing proposition here. As the *p*H of a soap solution is brought closer to neutrality, the solution contains less soap and has reduced detergent action. Soaps are salts of moderately strong to strong alkalies with weak, long-chain fatty acids. These amine or potassium or sodium salts when dissolved in water undergo hydrolysis into some free alkali and some free fatty acid. As acid, either the fatty acid or another, is added to neutralize the liberated alkali, more alkali is produced by progressive hydrolysis of the soap so that when the *p*H is in the neutral range or acid, only free fatty acid and no soap is present and lathering and cleansing power are gone.

An improvement in the soap shampoo, not in its reduction in *p*H but in its resistance to reaction to hard water, is possible. Addition of a relatively small proportion of a surface active agent, triethanolamine lauryl sulfate or the ethoxy lauryl sulfate, will prevent the deposition of calcium soaps as a sticky curd. This will also assist in maintaining clarity in the shampoo by preventing precipitation of small quantities of fatty acids or oils. Further, small amounts of a sequestering agent, salts of ethylenediamine tetraacetic acid, or citrates or gluconates, will form complexes with available calcium, magnesium or iron ions and prevent their reaction with the soap.

Even a wholly synthetic detergent type shampoo may not always be safely reduced in *p*H. Foaming power and cleansing power may be seriously affected and even stability may be less, because of greater hydrolysis, in the acid range. There is some evidence, in some special cases, that skin irritation is greater with these substances when they are somewhat acid instead of neutral or slightly alkaline.

(*Continued from page 37*)

mine when 10 per cent of the propellent has leaked out, making the package unacceptable.

3. *Spray Rate.* Finished packages are weighed and activated for three 3-second shots, and the average amount of spray rate is determined to see that the valve is within the specifications for this component.

4. *Valve Flaws.* A sample of containers are filled and put in a hot water bath at 130° F. to determine what percentage of leakers we can expect from the valve on the container.

5. *Stability Studies.* All products under study are put up at room temperature, 37° C., and 45° C. for various periods of time, and observed, to check for any discoloration or corrosion. Also, the contents are checked chemically to determine if either the active ingredient or any other part of the formulation is affected. If any trouble is noted at higher temperatures, this does not necessarily mean that we can expect this difficulty at room temperature, but does tell us that we must be careful, and this indicates that room temperature studies should be followed more closely.

How can we all benefit from the growth of pharmaceutical aerosols?

1. Fillers should first decide whether they want to enter the field. This will involve additional expenses.

2. Any filler interested in pharmaceuticals should set up a special isolated clean area for either drugs or food, and separate it from the filling of insecticides, hair sprays, and the like. There should be an adequate quality control and development group to aid the pharmaceutical houses in the development of new drug forms. We all know that any business concern will work with a supplier who works with them. *It is too late to get the business for a product that has already made good on the market. When the filler has worked with the pharmaceutical houses on its development it is generally conceded to be their project.*

3. Valve manufacturers will have to spend more money on the development of valves for new applications—accurate metering for both the chloro-fluoro hydrocarbons and also nitrogen propellents. The Food and Drug Administration does not accept the average of 10 shots because the patient does not get the average of 10 shots, but only one shot at a time. This will lead to possible applications in injections, particularly in the veterinary field, in inhalation therapy, and also in treatment of mastitis in cattle.

4. Container manufacturers will be obliged to consider smaller and smaller sizes, as most pharmaceuticals are packaged in three ounce and smaller containers.

5. New plastics must be developed to compete economically with such materials as tin and aluminum.

6. Closure manufacturers must work toward an economical, plastic pilfer-proof closure.

If these points are considered, everybody can benefit from this growing business. •

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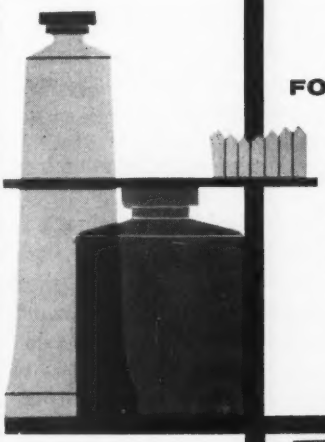

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(*Continued from page 39*)

above, and you will note they are more or less subjective; that is, confidence, experience or know-how, familiarization, etc. But what can be done objectively to protect the integrity of the product? Before we do anything, we must make sure that this concentrate is no more and no less than what we planned.

Mixing procedures and incoming ingredients for this concentrate are thoroughly scrutinized; brief but exact tests are set up to insure the quality of those ingredients. A mixing procedure is introduced showing that with checks and double checks there can be no mistake. Again, this is all a cooperative effort. The next step is to set up a suitable control or test to determine if our concentrate is within specifications. This is done in many ways, but it is usually set up by the pharmaceutical people. Generally, a relatively fast, accurate method is established to determine the assay of certain ingredients both quantitatively and qualitatively. In this, as in many other aspects, the filler is beholden to the customer. The customer considers what equipment is available for the filler to do this testing, and a suitable procedure is developed using this equipment.

At this point all of the many problems concerning packaging have been worked out, and our product is now ready for production.

But is it? How are we going to handle it? Can we, the filler, create a satisfactory word picture of our operation to convince our customer that it can be done, and is reproducible as to the same quality of our laboratory tests? I hardly think so. As part of our development project with the pharmaceutical people, we must have a test run. This is just as essential as the first step in development. It's familiarization!

Actually this test run serves another and most important function for the customer. It provides him with the units necessary for clinical testing.

To some, this cooperative effort at this point seems more like a tug-of-war, but rather it's like a tag team match in wrestling. When one's energy or, in this case, knowledge is exhausted in this particular phase of the battle, the other part of the team takes over. Together they are almost unbeatable, but separately they are a pushover.

Before scheduling his test run, the aerosol laboratory has been working on the method. That is: How can we fill this product the simplest, safest and shortest way? The more steps there are, the more control steps must be taken. The shortest distance between two points is a straight line. The shortest distance between active ingredients and finished product is a straight line. Our problem is to find the shortest straight line from the first step to the last. The less equipment used, the less possibility for contamination. Some companies, and we are one, find it profitable to have separate portable tanks for pharmaceu-

FOR THE DRUG & COSMETIC INDUSTRY

CHEMICAL INTERMEDIATES
acetaldehyde
acetanilide
acetic anhydride
benzoquinone
crotonaldehyde
isobutyraldehyde

HEMOSTATIC AGENT and ADSORBENT
oxidized cellulose

STABILIZERS
Tenox antioxidants for Vitamin A and such oils and waxes as paraffin, mineral oil and lanolin

PLASTICIZERS
dimethyl phthalate
diethyl phthalate
triacetin

SOLVENTS
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acetone
ethyl acetate
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tical compounding and processing. These are not available for any other operation.

After all the preliminary plans are formulated, we give the customer a protocol which encompasses the specifications and testing procedures on all ingredients that go into the container. And the same testing is done for all component parts; these we call pre-production checks, and they tell us whether the particular component conforms to specifications. Included in this are our production methods, a short description on how it is handled. And finally there are our in-line controls and our laboratory controls.

These controls are just about standard for our industry. But on almost any product there are special tests for specific products. As you would guess, by the very nature of the business, there are many for the pharmaceutical industry.

Let's take a look at the facilities. You all know that the equipment necessary is dependent on the product you are going to manufacture. The two basic methods of manufacturing are cold filling and gassing. Almost any product can be handled by either one method or the other. Let's examine them individually in the light of a pharmaceutical product. In this field, the concentrate is usually the highest costing material (different from what we are used to). This alone is a good reason for keeping concentrate at a minimum, but the main reason is that it's good pharmaceutical practice to keep carriers at a minimum for reasons of potency and faster action, and to avoid deleterious effects.

In cold filling, we cool the concentrate and the propellent and add them separately to the container. Can you imagine cold filling a 5 per cent concentrate for a 50 gram fill? We would need more concentrate for our system than for our order. How about pressure filling the same product? Do you think it's profitable to gas 95 per cent propellent? Wouldn't it be better to drop it in warm—and add propellent in four shots, each shot being progressively heavier?

What else has this done beside provide us with a good economical method? Sure, we cut our equipment down to one machine and one tank—the shorter the route, the less fear of contamination.

This is just one case; some products warrant cold filling, pressure filling with liquefied and compressed gases, and some I'm sure would fit one stage. You see the classical methods are not always applicable—ingenuity and experience can never be bought. Wouldn't I be foolish to set up and buy equipment to do just the product above? Let's face it—most contract fillers say "All I offer is service." We think this is a gross understatement—we offer service, quality and versatility—all we ask in return is quantity.

It seems we have strayed from our topic of facilities, but I think we all know what is needed.

As was mentioned at the outset, the primary need

(*Continued on page 111*)

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Skin Research

Soap and Skin

Views on the action of soap on the skin have changed a good deal in the past; to the Victorians cleanliness came next to godliness, and the consumption of soap increased enormously with advances in chemical techniques of the industrial revolution. The nature of soap has not changed much since their time, but knowledge of its action on the skin has broadened and the whole position has now altered in that other cleansers are available and the use of soap is not the only alternative to squalor.

The enthusiastic support of soap accorded by the Victorians was followed by a reactionary swing, and some senior dermatologists between the wars considered it almost wholly bad. Henry MacCormac, for example, used to attribute to soap far more harm than good in the cause and prevention of skin diseases. Today we have perhaps a position somewhere between these two extremes according to a review by F. R. Bettley (*Brit. Med. J.* p. 1675, June 4, 1960).

The antibacterial action of soap was investigated and described by Walker (1924, 1925, 1926). He found that the antiseptic action varied with the soap according to its fatty-acid content and with the bacteria studied. Thus, oleate and linoleate had negligible action in respect of *Salmonella typhi* but were effective against pneumococci; palmitate and stearate soaps were effective against both organisms. The mixed soaps sold commercially contain a variety of fatty acids which should give them good antiseptic action against streptococci, pneumococci, *Corynebacterium diphtheriae*, meningococci, and gonococci. The Gram-negative rods *Escherichia coli, Salm typhi*, and the paratyphoid group are more resistant. In these days it is particularly important to observe that *Staphylococcus aureus* appears to be completely resistant to soap. Colebrook and Maxted (1933) confirmed some of these results and found that in respect of streptococci the antiseptic action of 1 in 400 soap solution was greater than that of 1 in 1,000 mercury perchloride.

Perhaps more important than killing micro-organisms is their removal from the skin by washing. Colebrook and Maxted deposited cultures and infected secretions on the skin and under various conditions attempted to recover them later by swabbing. They found that five minutes' ordinary washing was apparently sufficient to remove contamination with streptococci but not with staphylococci. Price (1938) used a standardized technique by which hands and forearms were scrubbed with soap and water for one minute in 14 consecutive bowls. After cultures of the washing water had been examined, the total number of bacteria removed in each washing was calculated, and from this an estimate was made of the total number of micro-organisms which had been present on the skin surface. As might be expected, the number of organisms removed by each successive washing becomes less and less. Price estimated that about half the total flora are removed in the first six minutes and two-thirds in the first ten minutes.

The whole bacterial flora are never removed, and this led to Price's conception of resident and transient flora. The former are fortunately usually not pathogenic, though sometimes a pathogen may become installed as a resident. According to Pohle and Stuart (1940) *Staph, albus* is the most common resident; Pillsbury *et al.* (1942) also identified a coagulase-negative *Staph, aureus. Micrococcus luteus, M. epidermidis*, and others. They found that even after 10 to 12 washings these organisms continued to appear in the washing-water, and all these authors have concluded that it is not possible to remove all the bacteria from the skin surface by washing.

The transient flora are those which are deposited on the skin and which are, apart from washing, at the peril of the self-sterilizing power of the skin. Following the work of Colebrook and Maxted, Price also decided that the transient organisms were easily removed by washing, especially if they were not allowed to remain long on the skin. Their results indicate that, in practice, when the hands are recently contaminated by handling infected material they can be easily cleaned and pathogenic organisms removed by thorough washing with ordinary non-medicated soap.

The property of cleansing or detergency is not altogether straightforward, and in the dermatological literature at least is not well defined. To remove water-soluble dirt a sufficient quantity of water is presumably all that is required. For oily or greasy dirt the usual fat solvents could be used. These are not, however, suitable for repeated application to the skin, and the alternative is to remove fatty material by emulsifying it. Skin cleansers are therefore surface-active substances, emulsifiers which lower surface tension at the oil-water interface and bring grease away from the skin in an emulsified form. The removal of insoluble dirt particles, including bacteria, is sometimes said to result from merely floating them off the skin, as the skin and the foreign bodies are more readily wetted by a low-surface-tension aqueous solution. This explanation is not enough.

McBain (1920) stressed the importance of the colloidal nature of soap solution and attributed the removal of solid dirt particles to the formation of sorption compounds with soap molecules. He quotes Shorter as mentioning that, in the presence of alkali, dirt particles and the surface to be cleansed both carry a negative charge. Lane and Blank

(Fishbein, 1945) quote evidence that at a *p*H above its isoelectric point keratin carries an increasingly negative charge. Most solid dirt particles and bacteria are also negatively charged, so that they are actively repelled from the keratin surface in the presence of an alkali, but are attracted and held to the skin at an acid *p*H, when the skin surface is positively charged. Blank and Coolidge (1950) confirmed these findings in respect of human keratin.

The active part of the soap molecule, the fatty-acid anion, also bears a negative charge; hence it is repelled by the skin surface and remains free in the solute. In the case of cationic detergents, such as the quaternary ammonium compounds, the surface-active cation is attracted to the keratin and adsorbed on to the skin surface, with consequent loss of detergent power. It appears from this that the most efficient cleanser for the skin should be an anionic detergent and should be alkaline. Ordinary soap, of course, fulfils this requirement; and the alkalinity of soap, which is so often regarded as a disadvantage, in fact makes a valuable contribution to its cleansing power on the skin. The keratin, surface-active anion, and the solid dirt or bacteria will then all bear negative charges and will repel each other.

As Blank and Coolidge point out, this has an important bearing on investigations into the degerming (killing and removal of bacteria) of the skin. Many of these investigations have assumed that the number of organisms which can be removed from the skin surface is a direct indication of the number present. When it is now appreciated that the ease of removal is greatly influenced by *p*H and by the nature of the cleanser, this assumption seems to be unjustified and some of this work therefore may need to be reassessed.

One may also observe that the efficiency of a cleanser will depend upon the nature of the surface to be cleansed. Keratin, protein with an isoelectric point of 3.5 to 5.5, is clearly very different from cotton, nylon, and crockery. This point is of importance not only to achieve efficiency and economy in cleansing, but, by choosing cleansers where possible which have little effect on the skin, to minimize the risk of irritant effects.

We must also consider the possible effect of washing on the self-sterilizing power of the skin. It has for many years been held that organisms deposited on the living skin are likely to die more quickly than if they are placed under comparable conditions on an inanimate surface. Even the skin of a cadaver loses its sterilizing power as soon as 15 minutes after death (Arnold *et al.*, 1930). They concluded that the acid *p*H of the normal skin was important for this function. However, Cornbleet (1933) found that staphylococci survived indefinitely in thermal sweat at *p*H down to 3, but that a skin surface at *p*H 7 inactivated those organisms. Burtenshaw (1948) found that fat-soluble extracts of skin were strongly bactericidal, especially the fatty acid and soap fractions. The bactericidal action of these substances may depend, as Walker suggested, not upon *p*H but upon the lowering of interface tension on the surface of the bacterium.

Washing with soap removes these substances from the skin and raises the *p*H but tends to leave behind a deposit of the soap (Ramsay and Jones, 1955) which may in some degree make up for the loss. Rebell *et al.* (1950) found that the self-sterilizing power of the skin was greatly decreased if the surface lipids were removed with ether, but there seems to be no report of investigations into the self-sterilizing power of the skin after it has been washed with soap. The results would be interesting and possibly important, for these various effects of washing with soap are antagonistic. One may observe in passing that furunculosis commonly affects chiefly the areas of skin which are washed most frequently and that the avoidance of shaving-soap is often sufficient to cure folliculitis of the beard region; similar considerations apply to chronic paronychia, in so many cases of which exposure to soap and water seems to play a major part.

Though Burtenshaw laid emphasis on fatty acids in skin self-sterilization, he nevertheless stated that the *p*H of the normal skin would alone be enough to kill many organisms. Eggerth (1926) found that the antibacterial action of soap was enhanced by an acid *p*H. The *p*H of the skin surface has been measured with indicators, by direct application of the electrodes of a *p*H meter, and by determining the *p*H of distilled water which has been left in contact with the skin. Though the results obtained by individual workers vary, there is complete agreement that the normal skin surface has an acid reaction—usually found to be between *p*H 5 and 6—and that certain regions are less acid, notably the flexural surfaces of the axillae and groins. This acid reaction may derive partly from sweat, since the *p*H of exocrine sweat is about 5.5 to 6 (Talbert, 1922). Szakall (1955) decided, however, that the *p*H of the skin surface is due not to sweat but to amino-acids which are released or discarded in the formation of keratin, and the work of Dowling and Naylor (1960) points in the same direction.

There is no doubt that the use of soap on the skin leads to loss of its normal acidity. Bernstein and Herrmann (1942) found that the ordinary process of washing with toilet soap raises the *p*H of the skin surface by 1 to 1.5 units and that it takes about three and a half hours for the normal reaction to be restored. Martin-Scott and Ramsay (1956) found a greater rise in alkalinity after washing—up to *p*H 8—but a more rapid restoration to *p*H 5 in only 25 minutes. Evidently much will depend upon the thoroughness and the duration of washing, the amount of soap used, and whether small amounts of soap remain on the skin from inadequate rinsing.

Klauder and Gross (1951) made particularly valuable observations on the effects of more prolonged exposure. They found that after ordinary washing the *p*H was restored to normal in three-quarters to two and a half hours. Longer periods of exposure while washing dishes raised the *p*H of the skin for four and a half hours; in canteen workers exposed several times during the day the recovery period was prolonged to 19 hours, so that in these subjects the hands were seldom at their normal *p*H. Each period of exposure to soap at *p*H 9.2 led to an increase of alkalinity of the skin from which recovery was so delayed that it was only on days off that the *p*H of the skin returned to normal.

(More of this very valuable survey will be reproduced in the next issue of this magazine.)

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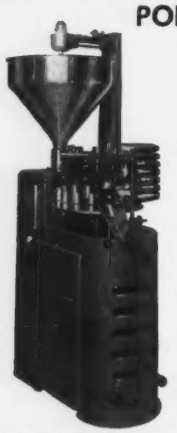

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(*Continued from page 107*)

is not just a plant, but a well-kept and well-organized plant. Always try to find out what your potential customer thought of your plant, remember that is probably one of his first and most lasting impressions.

We need refrigeration and tankage for propellents, driers, filters, screens, etc. Obviously we need tanks for mixing and, as you know, stainless steel is best for pharmaceutical products. You of course need filling lines. And it's best if they are in segregated areas, although this is not always possible. Normally I would merely mention coders and pass on. But let's remember whom we are dealing with—an illegible code is a major defect. We all know or should know that in the pharmaceutical industry a unit without a code is not marketable, and can cause the customer great problems. The balance is standard packing equipment such as labellers, cappers and compression units. Finally, after a product is packaged, it is taken to a segregated area and, upon notification of release, is shipped to the customer.

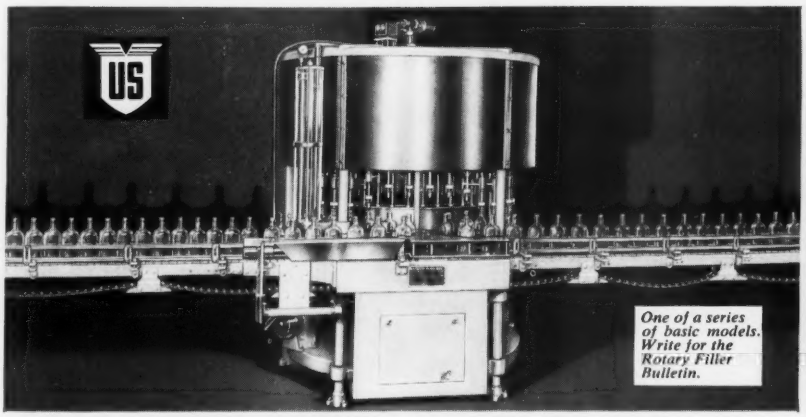
Probably one of the most important considerations in filling these pharmaceutical aerosols is the filler's laboratory. This is one of the biggest overheads that a filler must maintain. The laboratory should include a research section manned with personnel thoroughly familiar with the pharmaceutical field. These individuals, through their understanding of the field, can aid in the conception and research of new products.

Another important function of this laboratory is a complete and well-staffed quality-control section. This section must realize and know the many aspects of pharmaceutical packaging. It usually works hand in hand with quality control representatives of the pharmaceutical company.

Generally speaking, when we deal with pharmaceuticals, we are talking about small containers that contain minute amounts of active ingredients. For this reason, more exacting and finer measuring and recording instruments are necessary for both plant and laboratory control operations.

Although it is not within the scope of this paper to establish standards for quality control, it is necessary to mention that any control operation must include: (1) preproduction inspection, (2) in-process controls, (3) laboratory controls, and (4) finished product inspection.

One very important aspect of the filler's role in pharmaceutical filling is that of economies. The filler is a ready-made testing ground; without any expense for equipment, new production personnel, and storage area, the pharmaceutical company can market his aerosol. If he desires to change his propellent system, container, or complete formula, he doesn't have to think of new equipment or facilities. The filler's versatility is waiting for his newest idea. We feel that this aspect is most important, and this point is often used in selling the filler to the pharmaceutical



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company. When the new product is being developed, who can foresee what the yearly production will be? If the product sells, the filler is waiting for the opportunity to produce; if not, there is no problem of having equipment sitting idle for the pharmaceutical company. There have been numerous articles on contract filling vs. doing it yourself, and I am sure this discussion will never cease.

In conclusion, the filler is ready and willing to act as an extra arm to the pharmaceutical industry. He is saying, we have experience in aerosols, we have equipment, we have limited knowledge of pharmaceuticals, we would like the opportunity to work with you. If a product is considered, we will help you develop it or perhaps develop it completely for you. We can both produce this product and control it according to your specifications. If you desire to change your package, you need not worry about production facilities, for that is our responsibility.

To repeat, the filler offers service, quality, and versatility, and in return he asks quantity from the pharmaceutical industry.

SUPERMARKET VERSUS DRUGSTORE

(*Continued from page 41*)

revealed an increase of 4 per cent in over-all volume; within this same year all other retail establishments such as department stores, variety stores, and drug stores, gained only 1 per cent. Perhaps the most glaring harbinger of things to come is that, between the years of 1947 and 1958, the retail drug business enlarged its sales of packaged medication, health and beauty aids, and toiletries only about 65 per cent, whereas the retail grocery industry attained the phenomenal expansion of 1,000 per cent wthin the same span for identical merchandise.

The foregoing briefly but amply visualizes the past performance and present status of the supermarkets in today's distribution picture. Their fantastic growth in such a short period signifys that these establishments possess qualifications either not available to or not offered by other retail operations. Furthermore, the mechanisms responsible for their enormous success seem to function to the advantage of the public, for, in the final analysis, the consumer is free to spend his dollars where he wishes. Dollar response has been so favorable and consistent that 2,110 new supermarkets were opened in 1959. From the variegated but related segments of the retail panorama, one can easily see that progress cannot be contained or even slowed, and that the the "one-stop self-service" form of retailing is the cheapest, fastest. and most convenient pipe line for the conveyance of goods from the producer to the consumer.

Supermarket Phenomenon

The supermarkets have devised and implemented a number of "firsts" which concertedly have given rise

to an unparalleled revolution in American buying habits: supermarket operations are characterized by an 18 per cent over-head, that is, for every dollar of gross volume, 18 cents is a fixed expense representing rent, light, heat, labor, etc.; this overhead, in comparison with the 29 per cent drugstore overhead, enables the supermarkets to offer lower prices when necessary, to engage intensively in promotional activities or, if nothing else, to show a greater net profit at the end of the year. The radical differential in overhead charges in favor of the supermarkets is effected by a few clever strategems: first, self-service—the elimination of sales personnel effects a tremendous saving in the cost of doing business; second, the supermarkets select locations away from high rental areas, generally some distance from urban centers, the thought being that, since America lives on wheels, a few miles more or less is inconsequential to the potential customer. The millions of dollars saved by low rentals have been substantially influential in the reduction of overhead. Standardization of merchandise sizes and rigid inventory control have also contributed materially to this low overhead.

Internal efficiency is not the sole cause of the supermarket's popularity. These institutions offer the public a number of irresistible inducements. Among such blandishments, parking assumes the paramount position; America is so highly motorized that there is one automobile for every three persons, and we demand that our vehicles carry us practically into the store or office. Consequently, streets in business zones are congested and finding a place to park is irksome. If a vacancy is finally found, a parking meter with a hungry mouth awaits, and the next problem is the proper change. Should the lessee over-stay his rental by one minute, a zealous minion of the law awaits the opportunity to practice his penmanship and to convey to his superiors how diligent he has been in apprehending violators. Although a parking violation is not defined as a criminal act, to the average motorist receiving a police summons seems to identify him with a criminal violation. The average person who gets a parking ticket and fine is so incensed that he will avoid that shopping area for many, many months. Commercial parking is not only overcrowded but is also prohibitively expensive.

Such annoyances and charges drive the motorized consumer to the "supers" with their ample, unlimited and, what is most attractive, free parking. The supermarkets are fully aware of the pulling power of their parking facilities and capitalize them to the utmost. Thus by one clever, simple, inexpensive service, they have lured, permanently, countless customers away from the large and small Main Streets of America. We reiterate, the solution of the parking problem is a leading factor in the meteoric rise of the supermarket industry.

The convenience of one-stop shopping has also become an immensely powerful drawing card for the

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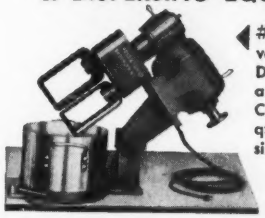

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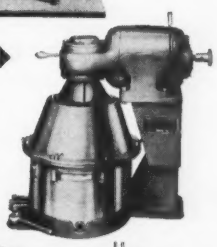

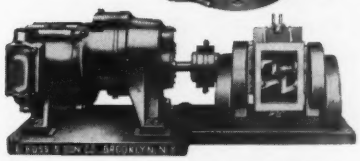

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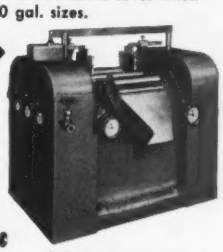

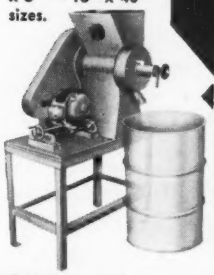

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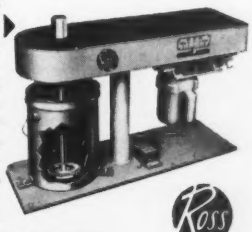

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supermarkets. To all intents and purposes, anything the consumer could desire may now be found under one roof whether it be food, drugs, cosmetics, toiletries, hardware, clothing, a cooked meal, etc.; the time and effort saved by not running from store to store for the endless items we deem necessary for the pursuit of life and happiness is valuable and appreciated by evryone, as evidenced by overwhelming and sustained patronage.

Self-service, a technique first exploited by supermarkets was truly a stroke of genius—a cornucopia with two ends; on one end, the elimination of sales personnel markedly reduced the cost of operation, which in some degree eventually is returned to the customer in the form of lower prices; on the other end of this horn of plenty, the buying public is delighted with the opportunity to select their requirements without the distraction of hovering sales persons. Unquestionably, self-service has stimulated the expansion of the supermarket industry, probably as much as any other responsible factor. However, other sales stimulants have made their emporiums attractive: the art of display has been applied with serious effort both to increase sales and to make shopping more attractive; with almost limitless square footage, goods are shown in massive overpowering quantities that compel inspection, consideration and, finally, purchase; lighting is brilliant and effectively directed; both men and women are fascinated by the endless array of every type of merchandise, which they are encouraged to handle and familiarize themselves with, thereby allowing the customer to enjoy himself, with the possibility of a sale. In many stores soft music adds to the seductive atmosphere. Man is a gregarious animal—the days of the cracker barrel general store are gone, but in its place has arisen an infinitely larger and more pleasurable meeting place. The crowds, the music, color, lighting, all concertedly create a carnival air which intrigues and excites millions of persons, who return time and time again.

Who Will Be Affected by the New Pattern?

The discussed departure from the past in the merchandising of all goods wil affect everyone, including the manufacturer, the retailer, the wholesaler, and, last but not least, the consumer. The supermarkets have already engulfed 70 per cent of the retail food business, and every sign proclaims a progression towards full monopoly. Since they consider all consumer goods fair game, all phases of retailing will feel the impact of their attack.

The most vulnerable industry is the retail drug business: retail pharmacy is a profession as well as a business, and therefore bears a cross of extraordinarily high labor costs. From the registered pharmacist at four dollars per hour, down to the stock or delivery boy, salaries are notably higher than those in other retailing establishments. Furthermore, in the drugstore each customer must be served to a great degree, inasmuch as self-service does not lend itself

for maximum utilization as in a supermarket. By virtue of these and other costs, retail pharmacy is saddled with a fixed overhead of about 29 per cent, which, in turn, forces the collection of a gross profit of not less than 33 per cent. This is the Achilles heel of retail pharmacy: the supermarket, with an overhead of only 18 per cent, has been able to prosper with an average of only 23 per cent gross profit. In a showdown battle between the drugstore and the supermarket for the lush drug and beauty business, there is little doubt as to the victor, since the cost of doing business will be the determining factor. Unless the trend is arrested or reversed, the retail grocery industry will envelop a major portion of the packaged medication, health and beauty aid, and toiletries business; this will leave the drugstore almost exclusively dependent upon professional revenue. If the total number of prescriptions written daily in America were divided equally among the 53,600 drugstores, each store would have 33 prescriptions daily, which would not even pay the overhead. We repeat, if the grocery store continues to drain off the accessory business necessary for the existence of the drugstore, then the inexorable laws of economics will be set into motion, reducing the number of pharmacies to that level required to fulfill strictly professional pharmaceutical services—a reduction in the magnitude of from 50 to 100 per cent.

There has been little if any reaction by organized pharmacy to the invasion of the drug business by the grocery industry. The issue is usually sidestepped or sugar-coated. One commentator, obviously not in the drug business, blandly claims that the drugstore has nothing to fear from the supermarket since the drugstore obtains a greater customer traffic. This is a delusion, since even the most superficial consideration would testify that customer movement through 318,000 grocery stores would vastly exceed the number of persons entering 53,600 drugstores. Pharmaceutical educators seem indifferent to, or are unaware of reality, clamoring for augmented pharmacy student enrollment. In the face of shrinking store volume and the over-all picture we have painted, increased pharmacy student enlistment seems the epitome of impracticality. Here and there voices are raised exhorting the drugstore to fight back with various devices such as better salesmanship, displays, service, delivery, public relations, modernization, and the like. One pharmaceutical leader has even urged a larger and more diversified line of unrelated merchandise. These are indeed feeble weapons with which to battle the monstrous economic might of the "super" chains; the A and P chain grossed over five billion dollars in 1959; Safeway over two billion; American Stores, 874 million; Food Fair, 770 million. The purchasing power exerted by such volume dictates the very bottom price for all classes of merchandise, and no amount of legislation can prevent the giants from being so favored. It is easily appreciated

(*Continued on page 116*)

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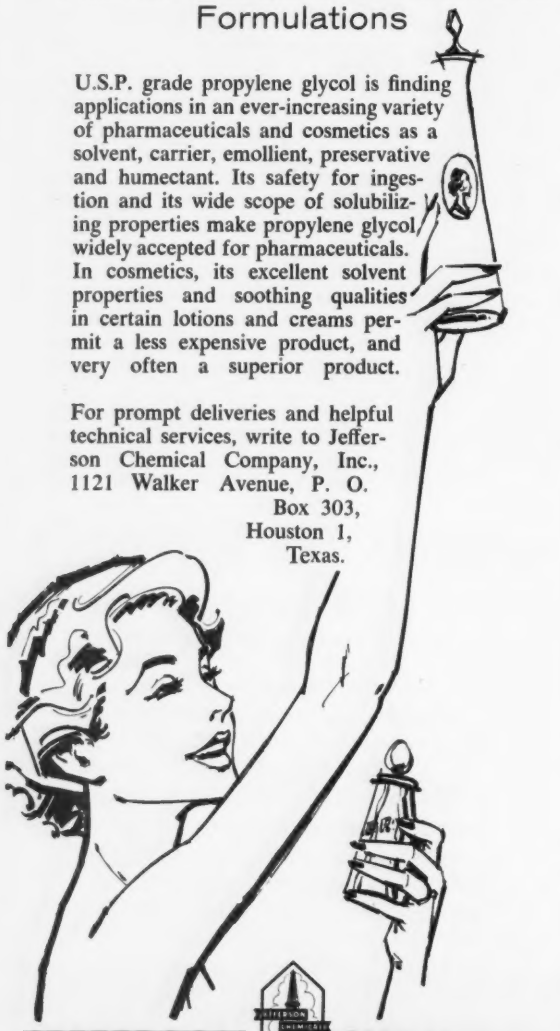

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that with the wider margins of profit not available to small operations, the supermarkets are in an excellent position to engage in intensive promotional schemes, offer lower prices and loss leaders, and indulge in other forms of business stimulation. Buying power is not the only force the drugstore must combat. There is the little matter of free and unlimited parking, the convenience of one-stop shopping, the allurement of self-service, attractive surroundings, music, crowds, rest rooms, and the rest.

Effect on the Public

If and when the Goliaths begin to battle among themselves for the succulent packaged medication, health and beauty aids, and toiletries business, then the public will reap a harvest in low prices. In such a struggle with the enormous financial and political powers involved, Fair Trade, or what is left of it, will be swept away. The commercial phase of retail pharmacy will be utterly consumed in the war between the giants and a mere skeleton will remain—the ethical or professional pharmacy. It is generally unknown to the layman and the doctor that the nonprofessional phase of the drugstore, that is, the 70 per cent of its gross volume that is derived from the sale of an immense conglomeration of unrelated merchandise and from business packaged medication, health and beauty aids, toiletries and cosmetics, subsidizes the prescription department. Thirty-three prescriptions daily could not possibly support even the smallest drugstore. There is no contesting the fact that the income from the sale of accessory merchandise does make possible the professional services rendered by 53,600 drugstores. If the number of stores is decimated by 50 to 100 per cent, and the remaining stores become strictly prescription laboratories, then the cost of prescriptions and professional drugs may increase by as much as 100 per cent for the very elemental reason that a subsidy will no longer be available to carry the prescription department.

There will be other repercussions if American drugstores are forced to contract in number and scope: the ever present drugstore has become almost a public utility; if it passes or changes in character, then the public will become painfully conscious of the manifold professional and nonprofessional services contributed without compensation. And when sickness strikes, the instant availability of life-saving medication on every street corner will be but a memory, and so will free medical information, such as when and where to get a doctor and what to do until he arrives; for free information on health and sanitation, the public will have to look elsewhere and, if the vacuum is not filled, a vast public health problem may arise. Thus, while the public may be happy at this time with their one-stop shopping, self-service, and free parking, these very same conveniences may yet deprive the population of a service which cannot be bought anywhere at any price—the corner drugstore.

Effect on the Wholesaler

Nor will the wholesaler escape the flame of revolution in distribution. The supermarkets, purchasing as they do in multiple carload lots and maintaining extensive warehouse and delivery facilities, will have absolutely no use for a wholesaler. This is true not only for the drug business, but also for the retail grocery industry.

Effect on the Manufacturer

Those who are concerned with the manufacture of packaged medication, health and beauty aids, and toiletries might pursue some intensive soul searching in these changing times. The Lorelei supermarket song, "Huge Volume," may yet entice the manufacturer into a diastrous future. If and when the supermarket extinguishes all competitive outlets for the above merchandise, then their managements will see their monopolistic and dictatorial positions.

So fortified, they will engineer new plans for still more profits, which is a consistent human characteristic. This objective will be initiated by a two-pronged attack: first, the application of pressure on the manufacturer for lower prices with the threat of boycott, if denied; and second, by the creation and aggressive promotion of their own competitive brands. Private-brand merchandise ordinarily does not frighten or even concern makers of heavily advertised goods, but when a retail industry maintains a rigid control over major retail channels, then we have an entirely different matter. The supermarkets could govern display to the point of actual inaccessibility or even total boycott of a product; at the same time they could apply effective measures towards the promotion of their own brands by display, under-pricing, and even advertising. The drugstores never did too well with their own brands in competition with high-pressure names; advertised brands will find in the supermarkets an adversary of infinite resources and strategic advantages. This fact is amply borne out in the bread, coffee, and canned goods business. Supermarket chains almost without exception, strenuously and profitably, push their own brands of baked goods, coffee, and canned goods. Packaged medication, health and beauty aids, and toiletries will be no exception once outlet monopoly has been achieved. If and when this does occur, Hotgate Tooth Paste, after a half century of selling with millions invested in a trade-mark, may wake up to find its property far less valuable.

Assuredly, massive advertising can force a market, but no amount of promotion can neutralize the free selling power residing in the daily circulation of millions of persons through the "supers" of America. Even in a legitimate contest between a heavily advertised brand and a supermarket brand, the latter possesses an enormous advantage, for its only expense will be floor space for display, whereas relentless, powerful promotion is tremendously expensive. •

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(Continued from page 43)

DCAT is recognized in the New York State Department of Agriculture and Markets' Official Rules and Regulations, Section 17, which states: "*Drugs and Chemicals*, Drugs and chemicals sold at wholesale shall be marked with the net weight or measure or the gross and tare weight. Allowable variations in weight or measure are such as prescribed by the Drug Trade Section of the New York Board of Trade and Transportation." (The DCAT had been designated as a section of the N. Y. Board of Trade from its inception until 1959, when it changed its name to "Association," but continued its affiliation with the N. Y. Board of Trade.)

Early in 1892, the Committee on Legislation reported its opposition to an act of the New York Legislature on the regulation of the sale of opium (in any form), cocaine and chloral hydrate. The committee felt that this bill was impractical and therefore asked and received permission to protest against the legislation.

Other important facilities that have almost as much historic significance include the services of Carson Gray Frailey, Washington, D. C., attorney, on problems of industry-wide application; the New York City office of Helen Booth, executive secretary since 1943; regular studies of the industry, called "Operation Retort;" and a bi-weekly newsletter covering important news for the members of the association.

And yet, when one goes over all the records, he soon finds that the most important service is not detailed in any material printed about the DCAT. Elusive and difficult to describe, it is the organization's inner core, its heart.

A member of the executive committee recently told me that he feels the DCAT has provided him the opportunity to make some of the best friends he has in the business world. "Being a member of the DCAT," he said, "implies to all other members that you have a real interest in the trade. Membership is like a private club. You get to know everyone on a first-name basis very quickly, and this relationship is invaluable to me in my business."

Another describes his reason for being active in the organization this way: "To me, the DCAT is not just another trade association. It is an organization with a heart that beats for all the various types of firms within the industry. From research to retail, I have come to know all the important leaders in the industry informally—membership in the DCAT is the best door-opener I know of."

Edward Plaut, now Chairman of the Board of Lehn & Fink, Inc., and son of one of the founders of the organization, was chairman of the DCAT in 1923-1924. In his annual report, for that year, he wrote: "Whenever any house has any matter which may be of interest to other members, they (should) bring it to the attention of the Section for consideration and action. This will amplify the files of our

usefulness and the houses will realize the more direct personal advantages of membership, and at the same time enable us to demonstrate that the Section is here for service."

The "heart" of the organization is clearly evident in its tradition of adopting memorials to men who have been prominent in the industry and beloved by their associates. During the course of the October 19th, 1893 meeting, for instance, W. Clark read a memorial to John McKesson, which concluded:

"The members of the Drug Trade Section of the New York Board of Trade and Transportation, as representatives of the commercial interests to which he was so long an honorable member, desire to record this minute of their respect for his career as a merchant and their affectionate regard for his memory as a man; and to extend to those to whom his death brings the severance of strongly cemented ties of filial love, the assurance of a sympathy most sincere."

Washington Office

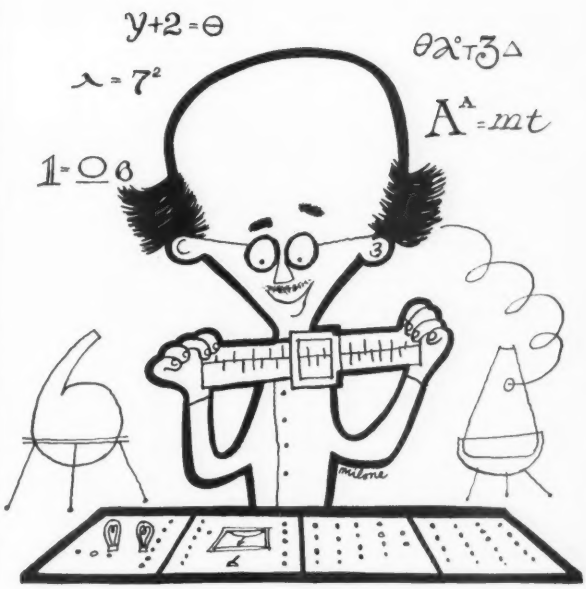
In 1941, Carson Gray Frailey was retained as Washington representative. As an attorney specializing in laws applying to the drug, chemical, and allied trades, he answers hundreds of inquiries each year from DCAT members. A call to his office often saves the expense of a trip to Washington for member firms; and his "Washington Letter," printed in the DCAT bulletin, is crammed with news of federal activity as it affects the industry. Upon request from members, he secures rulings, interpretations, and literature from governmental agencies.

A native of Washington, Mr. Frailey knows many of the key executives in the government. As an authority on laws relating to the trade, he is a member of the faculties in the law schools of both George Washington University and Temple University, where he lectures on pharmaceutical jurisprudence.

Helen Booth, executive secretary of the organization, has been with the DCAT since 1928. Her background as a professional trade association expert has helped lead the DCAT from 400 to 800 members. Her responsibilities include the organization of committee activities of the Association and editing the biweekly DCAT bulletin. She is often able to furnish valuable information to members on trade practices. Miss Booth arranges the annual March dinner, the annual Fall Meeting, and the numerous luncheon meetings. She maintains all association records and other matters incident to organization management.

Operation Retort

In May 1954, the Association inaugurated its series of surveys called "Operation Retort." These are periodic examinations of problems common to the members of the Association. Subjects covered to date (17 have been published since 1954) include: the member firms' policies on holiday closing; employee benefits; salaries of office manufacturing, and laboratory employees; policy on terminations, fringe benefits,



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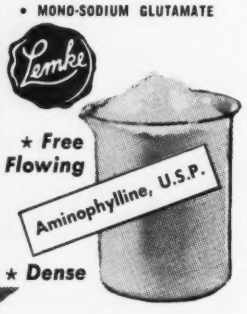

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Newsletter

The *Digest of Current Activities and Trends* is a bi-weekly newsletter that goes to all member firms. A typical issue includes The Washington Digest, recent rulings affecting DCAT member industries, reports on the DCAT's legislative committee's activities, government research reports from the various federal agencies in the drug and chemical field, U. S. and foreign import-export rulings, current price indexes of drug, chemical, and allied trade products, statistics on current business trends, comments on articles in the trade press, reports on foreign industry regulations, news of industry meetings and conventions, the names of new members, and Carson Frailey's "Washington Newsletter."

Contacts

The chief function of many trade associations is to provide a congenial backdrop against which the lights and colors of more serious things can be played. The DCAT assures this possibility with several social-business meetings throughout the year.

The annual banquet has already been mentioned. From the first banquet held in 1926 to the latest meeting at the Waldorf. This event has been the high point of the Winter for DCAT members. The standards for speakers at these gatherings are very high. In the past the organization has heard cabinet officers (Secretary of Labor Mitchell, 1959), senators, foreign diplomats and UN officials. Earl Kintner, Commissioner of the Federal Trade Commission addressed this year's banquet.

Annual Meeting

The annual fall meeting usually takes place at a resort in the Poconos or at Lake George. The first such meeting in 1936 was attended by 78 members, nine of whom brought their wives. This year's three-day function will probably play host to 500 or so, about 75 per cent of whom will be fortunate enough to have their wives in tow.

The fall meeting combines business sessions with all the pleasures offered by a fine resort. Everything from golf to croquet, tennis to horseshoe pitching is included in the recreational program.

Luncheon Meetings

During the year, three or more luncheon meetings are held in New York, usually at the Waldorf. Here, speakers of national prominence discuss problems and activities of major interest to members. One of this year's luncheon meetings heard William Graham

when he was chairman of the board of the Pharmaceutical Manufacturers' Association, and General John Hull, president of the Manufacturing Chemists' Association, on what the next few months would bring to the industry.

THE PHARMACEUTICAL INDUSTRY

(*Continued from page 35*)

greater than the corresponding figure of $22,226,000 in 1954. Shipments in 1954 were almost equally divided between ethical and proprietary products. Salves and ointments, $33,101,000 in 1958, a 160.6 per cent increase over $12,743,000 in 1954, were almost wholly proprietary in 1954. Nasal preparations increased 26.4 per cent in 1958 to $15,922,000. Of the $12,632,000 in 1954, $7,499,000 were ethical preparations.

Laxatives, cathartics, antacids, and other gastrointestinal medications in 1958 increased by 29.0 per cent to $159,112,000. In 1954, shipments of $123,368,000 included $39,900,000 of ethical preparations and $81,642,000 of proprietaries. Total antacids increased 23.6 per cent to $57,712,000, while total laxatives increased by 25.7 per cent to $70,764,000. The unrevised totals in 1954 included $17,178,000 ethical and $22,429,000 proprietary preparations for a total of $39,607,000 antacids (compared with the revised figure of $46,657,000); and laxatives valued at $56,311,000, with proprietary preparations at $40,222,000 and ethicals at $16,089,000. Liquid antacids showed the outstanding increase in this group—82.0 per cent.

Vitamins for human use increased 39.6 per cent to $300,147,000 for 1958, compared with $215,074,000 in 1954. The unrevised figure for 1954 of $214,509,000 was divided between $171,224,000 ethical preparations and $39,750,000 proprietaries.

All other pharmaceutical preparations for human use totaled $1,284,907,000 for 1958, 54.8 per cent greater than the revised figure of $830,177,000 for 1958. Unrevised shipments in 1954 were valued at $830,744,000, divided between $600,428,000 of ethical preparations and $208,615 proprietaries. Major increases from 1954 to 1958 were shown by aspirin compounds, 173.3 per cent higher from $31,538,000 to $86,079,000; antiseptic ointments and creams, 75.8 per cent higher from $19,102,000 to $33,532,000; sulfonamides and combinations, 53.8 per cent greater from $23,691,000 to $36,447,000.

PATENT THOUGHTS AND TRENDS

(*Continued from page 69*)

Plus Egg." The Board felt that, since the consent judgment was based merely on an agreement between the parties and not on a judicial determination, it had no standing as a precedent. Also, the fact

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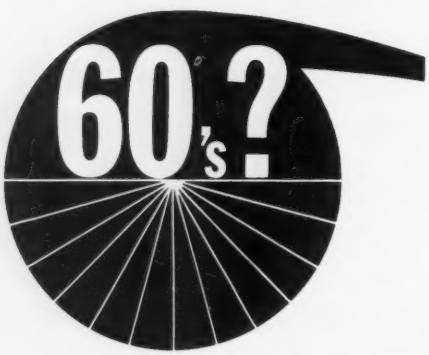

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that the other competitors discontinued use of the designations they were using was not, in the Board's view, actual trade recognition, as that action indicated that the competitors only wished to avoid further litigation.

Nor was the Board impressed with a number of affidavits by retail clerks who asserted that prospective purchasers requesting "Shampoo Plus Egg." were given Helene Curtis's product because customers referred to Helene Curtis's product by that term. The Board felt that the clerks were not competent to establish the meaning that *purchasers* attached to "Shampoo Plus Egg."

Also, the Board was not impressed with the commercial success of the product, even though the record showed that over a period of ten years Helene Curtis enjoyed sales in excess of $12,000,000 and expended over $3,000,000 in advertising.

In addition to showing the futility of the reasoning that simply because the other fellow does something makes it right. this case also shows the futility of hoping to build valuable trademark rights in a mark that is inherently weak because of its descriptive nature, particularly where the mark appears incapable of serving as a trademark, that is, to identify the source of the goods.

RECENT PATENTS

2,928,844—Upjohn—Celesticetin
2,928,845—U. S. Vit. & Pharm Corp.—Dialkylaminoalkoxy-Phenylethanol Esters
2,928,846—Chas. Pfizer—Imides of Bicycloheptene Adducts
2,928,855—Olin Mathieson—Mercurial Diuretics
2,928,871—Hoffmann-La Roche—Terpenyl Aryl-sulfonylureas
2,928,872-4 — U. S. Vit. & Pharm Corp. — Hydantoamides
2,929,712—U.S.A.—Coumestrol Esters
2,929,762—Dow—Phosphoramidates
2,929,764—E. A. Hultin et al., Sweden—Blood Plasma Substitute Containing Dextran Glucosides
2,929,813—Chas. Pfizer—Oxido Steroids of Pregnane Series
2,929,814—Olin Mathieson—Diketal Derivs. of Halo-Hydroxy Hydrocortisone and Cortisone
2,929,815—Merck—Oxido Steroids
2,929,817—Les Labs. Fr. Chim. (France)—Synthesis of Reserpines
2,929,818—P. A. J. Janssen (Belgium)—Phenyl-Tetrahydropyridine Alkonoic Acid Amides
2,929,821—Ciba—Oxazoles
2,929,821—Upjohn—Amino Dihydroxy Methyl Coumarin
2,929,822—Geigy—Carbalkoxyamino Coumarins
2,929,825—Chas. Pfizer—Halogenated Oxynaphthotetralones
2,929,844—Sterling Drug—Dihaloacetamides
2,929,845—Merck—Eulicinine
2,929,848—Upjohn—Hydroxyphenyl Isopropyl Ketone

2,930,731 — Upjohn — Bis [B-(ortho-Hydrocarbon-oxyphenyl) Iso Propyl] Amines

2,930,732—Olin Mathieson—Anesthetics

2,930,734—Akt. Recip (Sweden)—Nitro Dichloroacetylamino Benzothiazole

2,930,735—B. Vogel—Zirconium Therapy in Ivy Poisoning

2,930,736—National Drug—Stabilized Trypsin

2,930,761 — Soc. Monsavon-L'Oreal (France) — Hair Cleansing Composition

2,930,791—Upjohn—Intermediates for Digitoxigenin

2,930,795—Lakeside Labs.—Methyl Pyrrolidines

2,930,797—Upjohn—Alkyl Indoleglyoxylamides

2,930,798—Et. Clin-Byla (France) Indol Oximes

2,930,804—Olin Mathieson—Sulfonyloxy Steroids of the Pregnane Series

2,930,805—Am. Home Products—Estrane Derivatives

2,931,757—Abbott Labs.—Sterility Testing Means

2,931,776 — Reckitt & Colman (England) — Denture Cleanser Composition

2,931,777—Gen. Aniline—Germicidal Detergent Compositions

2,931,804—Geigy—Substituted Aziridines

2,931,805—Smith, Kline & French Labs.—Spiro Bicyclo Heptane Alkylenimines

2,931,806—Merck—Ethylenedroxy Keto Cyano Pregnenes

2,931,807—Merck—Acyloxy Diketo Cyclopentano-phenanthrenes

2,931,808—G. D. Searle—16-Cyano-5-Pregnene-3, 20-Diol

2,931,809—Lepitit (Italy)—Antibacterial Azomethine Derivs. of Cyanothiophene or Cyanobenzene

2,931,810—Olin Mathieson—Phenothiazines

2,931,812—G. D. Searle—Alkenyl Alkyl Amino Ureiclouracils

2,931,813—G. D. Searle—Alkenyl Alkyl Sulfonamido Aminouracil

2,931,814—Ortho—4-Alkylpyrazoles

2,931,816—Ethicon—Furans

2,931,830—Sterling Drug—Triiods Hydroxyphenyl Propionic Acids

2,931,838—Det. Danske Med.—Kem. Komp. (Denmark)—Methyl Hydroxy (Trichloro-1-Hydroxyethoxy) Pentane

2,932,605—Imperial Chem. Inc.—Coccidiosis Treatment With 4-Bromo-4'-Nitro-Carbanilide.

2,932,606—Chas. Pfizer—Hydroxy Derivs. of Cortisone.

2,932,616—Monsanto—Detergent Reaction Product of Ethylene Oxide and Glycerol Dialkyl Ether.

2,932,617—Lever Bros.—Detergent Containing Alkyl Bis (Hydroxymethyl) Oxazolines.

2,932,638—D. H. Gould et al.—Spirodioxolanes.

2,932,639—Schering—Oxido-Pregnadienes.

2,932,640—Merck—Oxides of 4-Pregnenes.

2,932,641—Meister Lucius & Bruning (Germany)—Butenolides of the Pregnene Series.

2,932,642—G. D. Searle—Oxygenated Cyclo Androstanol Lactones.

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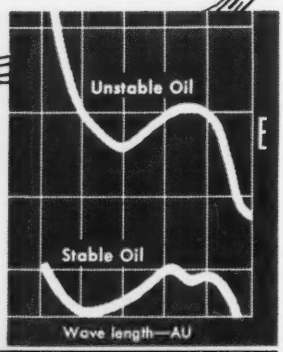

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2,933,495-6—Upjohn — Aminoalkanol Phenothiazines and Oxides.
2,933,497—G. D. Searle—Bicyclic Thiazoles.
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2,933,509—Merck—Steroids.
2,933,510—Julian Labs.—Keto Halo Steroids.
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2,933,519—Spafa (Czech.)—Basic Esters of Alkoxy Substituted Diphenyl Carbamic Acids.
2,933,531—Upjohn—Dimethylhydrazine.
2,933,532—Upjohn—Hydrazino Propanes.
2,934,396—Soc. Monsavon-l'Oreal (France) — Dyeing Hair With Dihydroxyindole.
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2,934,540—Research Corp.—Thiazolidine Intermediates For Penicillin.
2,934,542—Smith, Kline & French Labs.—Methylenedioxyphenyl Cyclopropylamines.
2,934,543—T. Reichstein et al.—Hydrophenanthrenes.
2,934,545—G. D. Searle—Steroidal Hydroxy Dien Ones.
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2,935,447—Kilco Co.—Appetite Depressant Containing Alginate.
2,935,448—R. M. Calder — Phosphatide Therapeutic Composition.
2,935,449—Chas. Pfizer & Co.—Stabilized Vitamin A Compositions.
2,935,508—Merck—Benzimidazoles.
2,935,514—Ciba—Benzimidazoles.
2,935,515—Chas. Pfizer—Antispasmodics.
2,935,519—Fransesco Vismara Soc. A. (Italy)—Acyloxy Hydroxy Ketosteroids.
2,935,521—Upjohn—Hydroxycortisone Diacylate.
2,936,263—Hardt Foundation — Therapeutic Package For Treatment of Ulcers and Gastritis.
2,936,309—Chas. Pfizer—Alkyl Esters of Halo Carboxy Pyrrolidone.
2,936,310—Polak & Schwarz — Macrocyclic Lactones Process.
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2,937,172—S. L. Shapiro et al.—Alkoxyethylguanamines.
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2,937,177—Am. Cyanamid—Aminoalkyl Phenyl Tetrahydropyridines.
2,937,179—S. L. Shapiro et al.—Phenylimidazolino Piperidines.
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(*Continued from page 102*)

Color Dispersion

A four-page folder describing Plasdone, pharmaceutical grade of PVP from General Aniline & Film Corporation, has been issued by Antara Chemicals, sales division of the corporation. Available from Antara, 435 Hudson St., New York City 14, the folder describes the uses and advantages of the product.

Snell Booklets

Foster D. Snell, Inc., 29 W. 15th St., New York City 11, has issued two booklets. One, Hazards, discusses the measurement, detection, correction, and litigation of casualty, fire, pollution, and product-liability hazards, and is written for insurance adjusters, plant safety officers, engineers, and others interested in mitigation and avoidance of accidents.

The second outlines the uses of *Chemical Market Abstracts*, a monthly compendium of all important chemical marketing data from all parts of the world in the form of abstracts and an index. How these are to be used, and by whom, are described in the booklet.

Silicones

A 1960 guide to General Electric's complete line of silicone products is now available from the Silicone Products Department, Waterford, N. Y. The eight-page illustrated booklet lists major product uses and benefits. The guide, CDS-129B, also contains information for obtaining additional detailed information on specific silicone products.

Nonionic Surface Active Chemicals

Hodag Nonionics, a bulletin describing the applications and tabulating the properties of 37 representative nonionic surface active chemicals, has been published by Hodag Chemical Corporation, 7247 North Central Park, Chicago 45, Ill.

Selection and Sizing of Industrial Strainers

An 88-page handbook on simplified selection and sizing of industrial and marine strainers is available from Tate Engineering, Inc., 516 South Eutaw St., Baltimore 1, Md. The Tate Strainer Guide contains data for the layout of fluid flow systems aud sizing of strainers, tabulated results of testings in its own research facilities, and valve and pipe selection information.

Communication for Industry

Communication Techniques for Industry Inc., 109 E. 36th St., New York City 16, has issued a six-page folder describing the organization's activities in visual-graphic communications in chemical engineering, pharmacology, biophysics, biochemistry, solid state physics, photochemistry, and corporate management affairs, to communicate scientific, technical, and product information. •

COMING EVENTS . . . . .

JULY

19-21 **Western Packaging & Materials Handling Exposition,** Pan Pacific Auditorium, Los Angeles, Calif. (Western Packaging Exposition, Clapp & Poliak, Inc., 341 Madison Ave., N. Y. C. 17)

AUGUST

1-5 **Gordon Research Conferences,** instrumentation, Colby Junior College, New London, N. H.

1-5 **Gordon Research Conferences,** steroids and other natural products, New Hampton School, New Hampton, N. H.

8-12 **Gordon Research Conferences,** food and nutrition, Colby Junior College, New London, N. H.

14-19 **International Congress of Clinical Chemistry,** Edinburgh, Scotland

14-20 **American Pharmaceutical Assn.,** annual convention, Shoreham-Sheraton Park, Washington, D. C. (A.P.A., 2215 Constitution Ave., N.W., Washington 7, D. C.)

15-19 **American Veterinary Medical Assn.,** national meeting, Denver, Colo. (Brian M. Foster, A.V.M.A., 600 So. Michigan Ave., Chicago 5, Ill.)

15-19 **Gordon Research Conferences,** medicinal chemistry, Colby Junior College, New London, N. H.

15-19 **Gordon Research Conferences,** analytical chemistry, New Hampton School, New Hampton, N. H.

15-19 **Gordon Research Conferences,** toxicology and safety evaluations, Kimball Union Academy, Meriden, N. H.

15-25 **International Symposium on the Chemistry of Natural Products,** Australian Academy of Science, auspices of the Section of Organic Chemistry, IUPAC, Melbourne, Canberra, and Sydney, Australia

27 **American Hospital Assn.** (through September 1), Civic Auditorium, San Francisco, Calif.

28 **International Pharmaceutical Federation,** general assembly (through September 2), Copenhagen, Denmark

29 **Gordon Research Conferences,** cancer, Colby Junior College, New London, N. H.

SEPTEMBER

1-7 **International Congress on Nutrition,** International Union of Nutrition Scientists, Washington, D. C.

8 **Pharmaceutical Advertising Club,** luncheon meeting, Hotel Roosevelt, N.Y.C. (D. Lindsay, P.A.C., Suite 608, 489 Fifth Ave., N. Y. C.)

11-16 **American Chemical Society,** national meeting, N. Y. C. (A.C.S., National Meetings Dept., 1155 Sixteenth St. N.W., Washington 6, D. C.)

12-14 **Pharmaceutical Manufacturers Assn.,** International Section, The Greenbrier, White Sulphur Springs, W. Va. (Dr. Carl Bambach, P.M.A., 1411 K Street, Washington 5, D. C.)

15-16 **Society of Cosmetic Chemists,** seminar, Hotel Drake, Chicago, Ill. (S.C.C., E. 63rd Street, N. Y. C. 21)

15-18 **Drug Chemical and Allied Trades Assn.,** annual meeting, Sagamore Hotel, Bolton's Landing, N. Y. (Helen L. Booth, D.C.A.T., One Liberty Street, N. Y. C. 3)

18-21 **Federal Wholesale Druggists' Assn.,** annual convention, The Greenbrier, White Sulphur Springs, West Virginia (Ray C. Schlotterer, F.W.D.A., 2 Lexington Ave., N. Y. C. 10)

18-21 **Packaging Machinery Manufacturers' Institute,** annual meeting (P.M.M.T., Room 863, 60 East 42nd Street, N. Y. C. 17)

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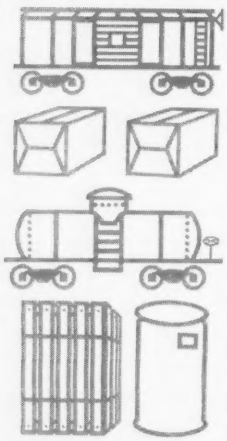

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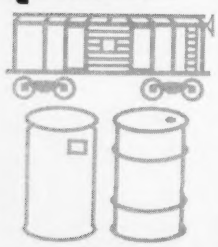

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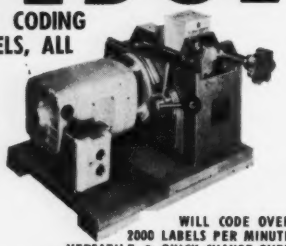

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SEPTEMBER *(Continued)*

21 **American Society of Perfumers,** closed meeting (Dorothy A. Douglass, A.S.P., 630 Fifth Ave., N. Y. C. 20)

25-27 **Pharmaceutical Council of Greater New York,** drug and cosmetic show, Trades Show Bldg., N. Y. C.

25-28 **American Institute of Chemical Engineers,** Mayo Hotel, Tulsa, Okla.

26-30 **Instrument Society of America,** annual meeting and instrument-automation conference and exhibit, New York Coliseum, N. Y. C.

OCTOBER

1 **Assn. of Clinical Pathologists,** joint meeting with Assn. of Clinical Biochemists, Royal College of Surgeons, London, England.

3-7 **American Material Handling Society,** meeting in conjunction with Canadian material handling show, Show Mart, Montreal, Que.

5-7 **Pharmaceutical Manufacturers Assn., Biological Section,** Boca Raton Hotel and Club, Boca Raton, Fla. (Dr. Karl Bambach, P.M.A., 1411 K Street, N.W., Washington 5, D. C.)

7 **National Vitamin Foundation,** symposium, Jewish Hospital of St. Louis, St. Louis, Mo. (Wm. Rubin, N.V.F., 149 East 78th Street, N. Y. C. 21)

10-12 **Assn. of Official Agricultural Chemists,** annual meeting, Shoreham Hotel, Washington, D. C.

10-13 **Technical Assn. of the Pulp and Paper Industry,** corrugated containers conference, Royal York Hotel, Toronto, Canada

11 **Society of Cosmetic Chemists,** Chicago Chapter, Chicago, Ill.

13 **Pharmaceutical Advertising Club,** luncheon meeting, Hotel Roosevelt, N. Y. C. (D. Lindsay, P.A.C., Suite 608, 489 Fifth Ave, N. Y. C.)

14-20 **National Wholesale Druggists' Assn.,** annual convention, Americana, Bal Harbour, Fla.

16-19 **Pharmaceutical Manufacturers Assn.,** Financial Section, Boca Raton Hotel, Boca Raton, Fla. (Dr. Karl Bambach, P.M.A., 1411 K Street, Washington 5, D. C.)

16-19 **Pharmaceutical Manufacturers Assn.,** Public Relations Section, The Greenbrier, White Sulphur Springs, West Virginia (Dr. Karl Bambach—see above.)

17-19 **American Oil Chemists' Society,** fall meeting, Hotel New Yorker, N. Y. C.

19 **American Society of Perfumers,** open meeting, Advertising Club, N. Y. C. (Dorothy A. Douglass, A.S.P., 630 Fifth Avenue, N. Y. C. 20)

19-21 **Parenteral Drug Assn.,** annual convention, Statler Hilton Hotel, N. Y. C. (P.D.A., 1420 Snyder Avenue, Philadelphia 45, Penna.)

19-29 **International Plastics Exhibition, "macroPlastic,"** Exhibition Halls, Utrecht, The Netherlands.

23-27 **National Assn. of Retail Druggists,** Municipal Auditorium, Denver, Colo.

25 **Assn. of Consulting Chemists & Chemical Engineers,** annual meeting and dinner, Hotel Shelburne, N. Y. C.

25-26 **Pharmaceutical Manufacturers Assn., Pharmaceutical** Contact Section, Washington Hotel, Washington, D. C. (Dr. Karl Bambach—see above.)

26-28 **Annual Symposium on Antibiotics,** sponsored by *Antibiotics and Chemotherapy, and Antibiotic Medicine,* Mayflower Hotel, Washington, D. C.

OCTOBER *(Continued)*

31 **Packaging Institute, Inc.,** annual national packaging forum (through November 2) Statler Hilton Hotel, N. Y. C. (Chas. A. Feld, P.I., 342 Madison Ave., N. Y. C. 17)

31 **American Management Assn.,** course in packaging (through November 4), Hotel Astor, N. Y. C. (A.M.A., 1515 Broadway, N. Y. C. 36)

NOVEMBER

2 **Society of Cosmetic Chemists,** New York Chapter, monthly meeting, Hotel New Yorker, N. Y. C. (Dr. Saul Bell, S.C.C., 2 East 63rd St., N. Y. C. 21)

3 **Pharmaceutical Advertising Club,** luncheon meeting, Hotel Roosevelt, N. Y. C. (D. Lindsay, P.A.C., Suite 608, 489 Fifth Ave., N. Y. C.)

8 **Society of Cosmetic Chemists,** Chicago Chapter, Chicago, Ill.

12-19 **Pan-American Congress of Pharmacy and Biochemistry,** Santiago, Chile

14 **Salesmen's Assn. of the American Chemical Industry,** annual sales clinic, Hotel Roosevelt, N. Y. C. (S.A.A.C., 60 East 42nd. St., N. Y. C. 17)

14-16 **Pharmaceutical Manufacturers Assn.,** Research and Development Section, The Cloister, Sea Island, Ga. (Dr. Karl Bambach, P.M.A., 1411 K Street, Washington 5, D. C.)

16 **American Society of Perfumers,** open meeting, Advertising Club, N. Y. C. (Dorothy A. Douglass, 630 Fifth Ave., N. Y. C. 20)

29 **Society of Cosmetic Chemists,** annual meeting, Hotel Biltmore, N. Y. C. (S.C.C., 2 East 63rd St., N. Y. C. 21)

30 **Toilet Goods Assn.,** Scientific Section, Waldorf-Astoria Hotel (Kathryn Fitzpatrick, 1270 Avenue of the Americas, N. Y. C. 20)

DECEMBER

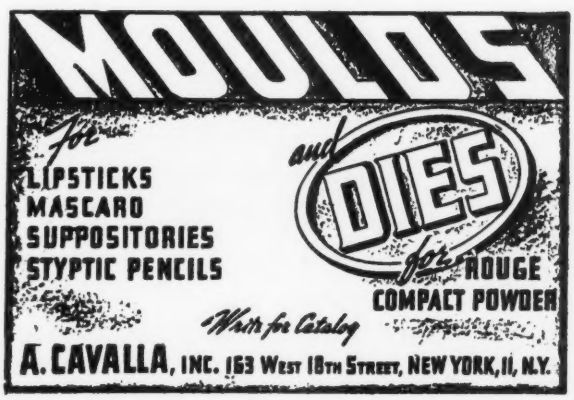
1-2 **American Medical Assn.,** clinical meeting, Washington, D. C.

3-9 **Chemical Specialties Manufacturers Assn.,** annual meeting, Hollywood Beach Hotel, Hollywood, Fla. (C.S.M.A., 50 East 41st St., N. Y. C. 17)

5-7 **Pharmaceutical Manufacturers Assn.,** eastern regional meeting, Waldorf-Astoria Hotel, N. Y. C. (Dr. J. O'Neill Closs, 1411 K Street, N.W., Washington 5, D. C.

8 **Pharmaceutical Advertising Club,** luncheon meeting, Hotel Roosevelt, N. Y. C. (D. Lindsay, P.A.C., Suite 608, 489 Fifth Ave., N. Y. C.)

12-14 **Pharmaceutical Manufacturers Assn.,** mid-year meeting, Waldorf-Astoria Hotel, N. Y. C. (Dr. J. O'Neill Closs—see above.) •



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SALES REPRESENTATIVE with basic technical knowledge of and experience in the flavor, perfume, and essential oil industry by large well established organization doing a national business. Chemistry background preferred. Headquarters would be in New York with travel through Eastern States required. Excellent opportunity for responsible person demonstrating capacity for growth. Apply by letter to Box JU-1, DRUG & COSMETIC INDUSTRY. Give full details of education, experience, marital status and salary required. All replies confidential.

EXCELLENT OPPORTUNITY for Chicago salesman with previous experience in the sale of perfume compounds and basic perfumery materials. Apply by letter giving full details of experience, education, desired salary and enclose snapshot. Our sales force have been notified of this ad. Box J-4, Drug & Cosmetic Industry.

SALES MANAGER—Established ethical drug manufacturer in Midwest city. Requires proven background in sales and marketing programming. Must hire and train sales force. Liberal benefits with a company with a future in a city that's a good place to raise a family. Send resume in confidence to Box MA-2, Drug and Cosmetic Industry.

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Help Wanted

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